

W I N T E R Astronomy Programs

****Feb Thursday 22 Feb: “Mission to Saturn”**

with John Conrad, NASA SSA, CCAS

Mar Tuesday 13: “The Crisis in Cosmology”

With Eric Kearsley

Mar Thursday 28: “Messier Tour & April Eclipse”

With Roger Kennedy

Mar Friday 29: Music Under the Stars “Spring”

With Linda Kennedy, Harp and Roger Kennedy

Apr Tuesday 12: Constellations of Spring

With Roger Kennedy

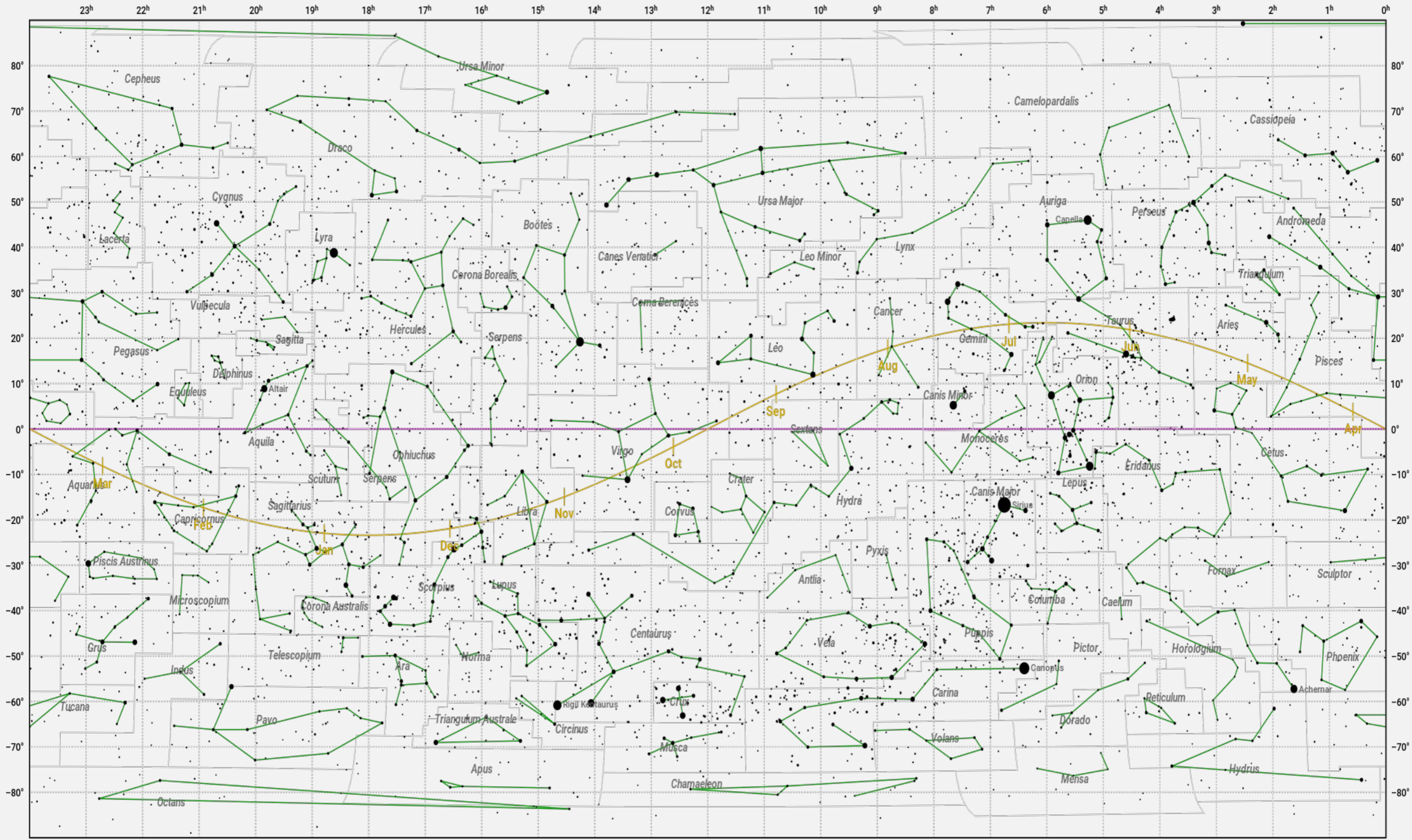
Apr Thursday 28: “NASA Contributions to Society”

With Frank O’Brien Jr, NASA SSA



Date	Action
3 January 2024	NRAO/GBO Call for Proposals
31 January 2024	NRAO/GBO Proposal Deadline @ 17:00 EST
29 February 2024	Individual Science Reviews Completed
15 March 2024	Science Review Panel (SRP) Meetings Completed
16-17 April 2024	Telescope time allocation committee (TAC) meeting
10 May 2024	Disposition Letters Sent

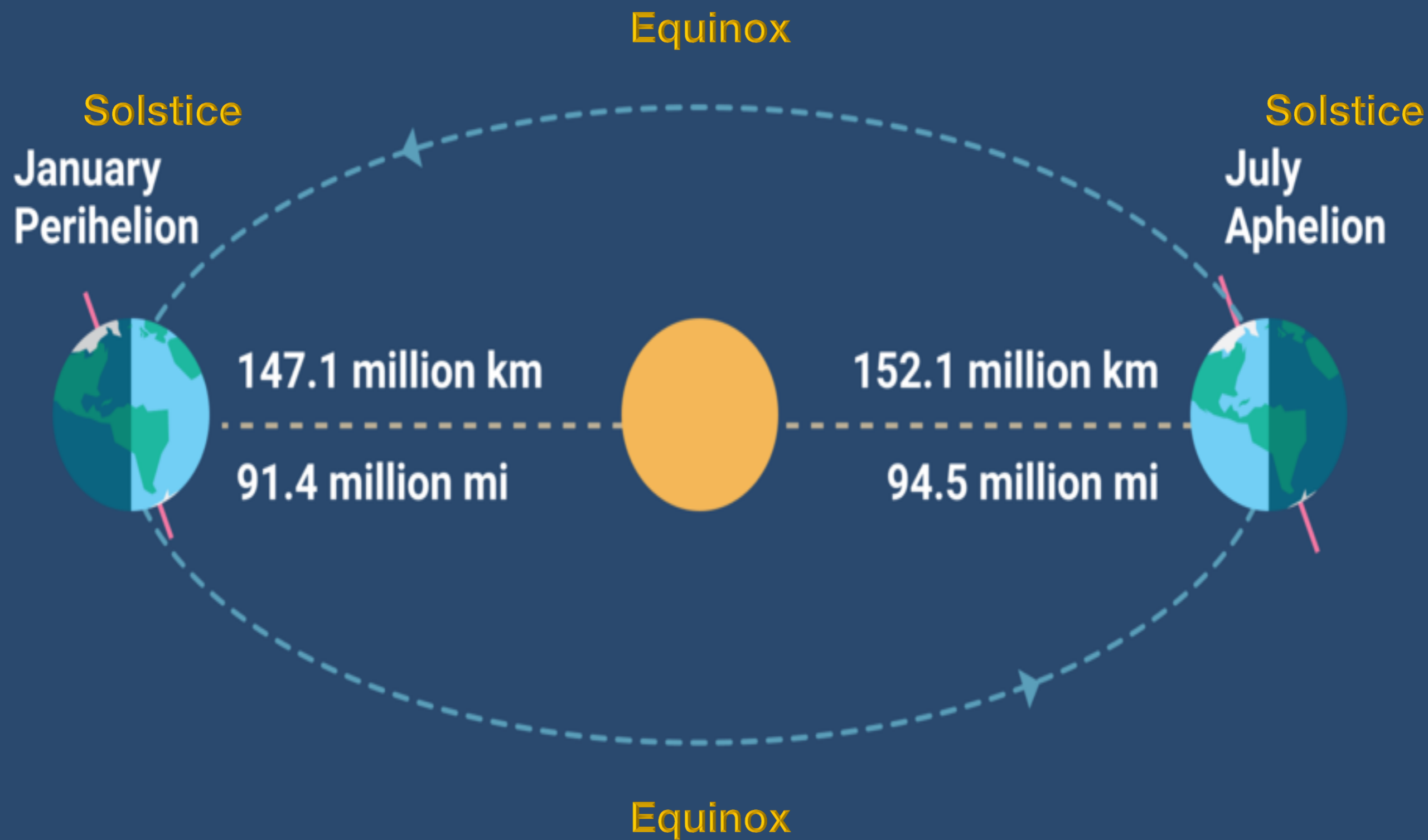


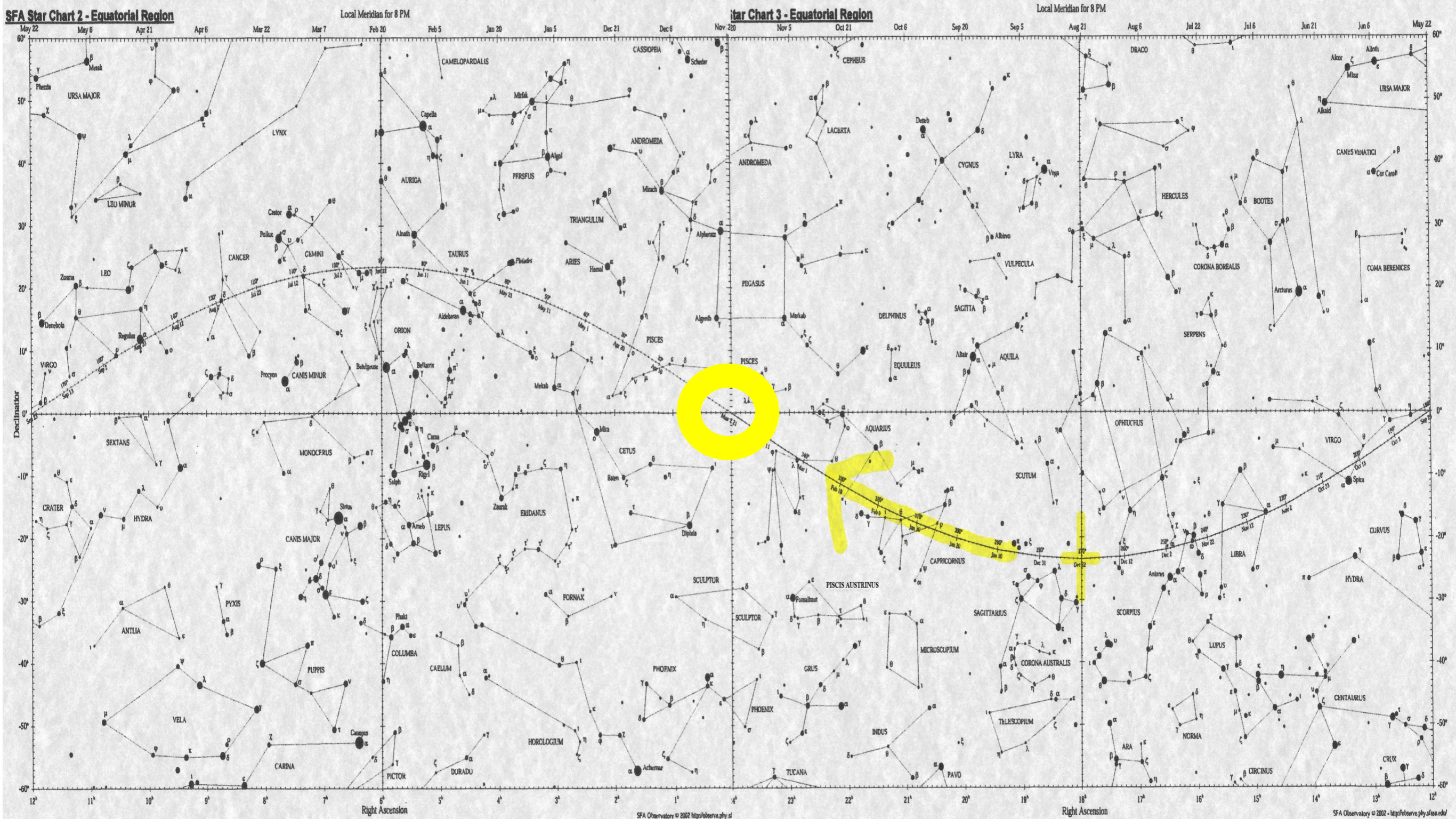


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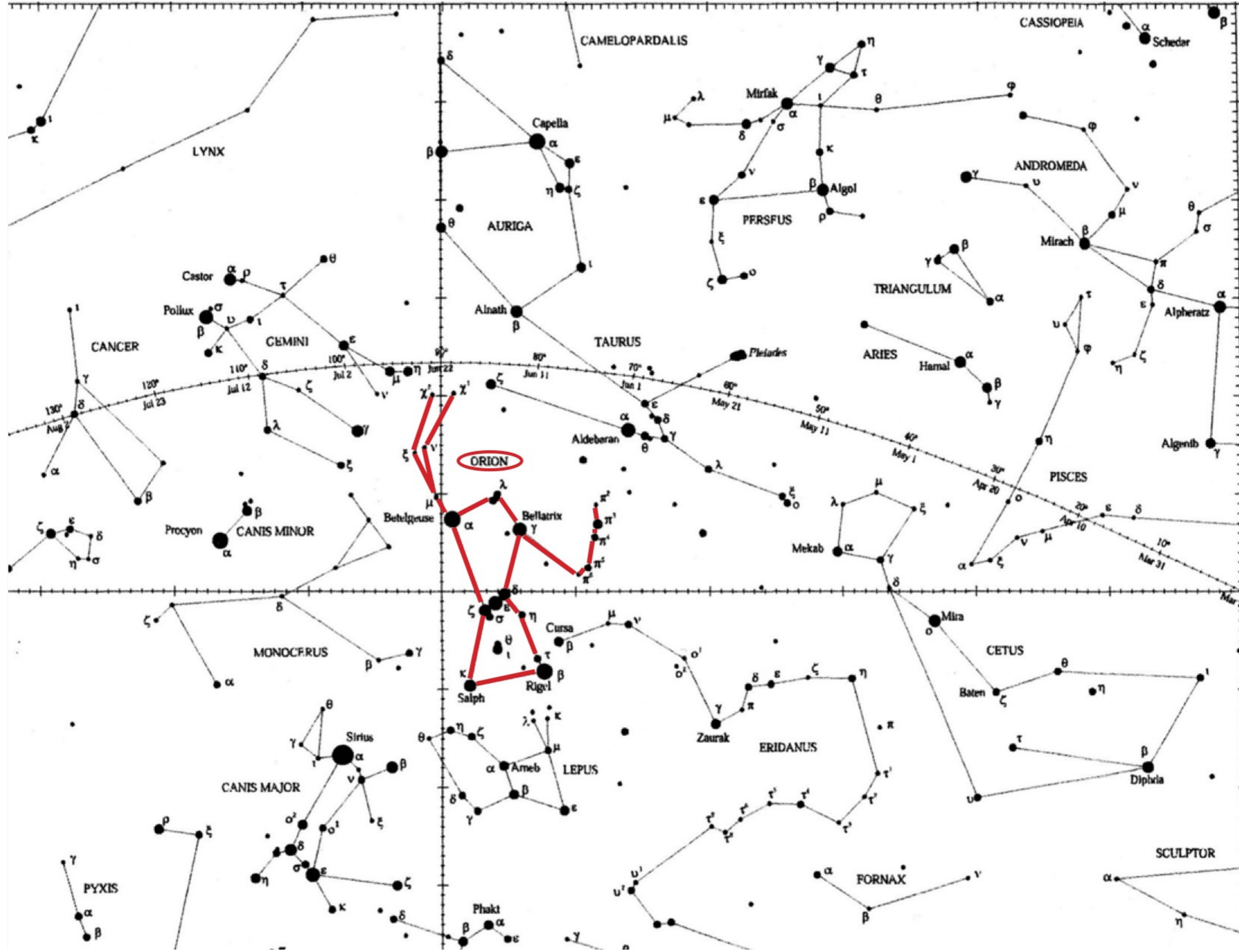
Magnitude scale: -6.0 -5.0 -4.0 -3.0 -2.0 -1.0 0.0 -1.0 -2.0

- The Equator
- Ecliptic Plane
- Galaxy
- Bright nebula
- Open cluster
- ⊕ Globular cluster

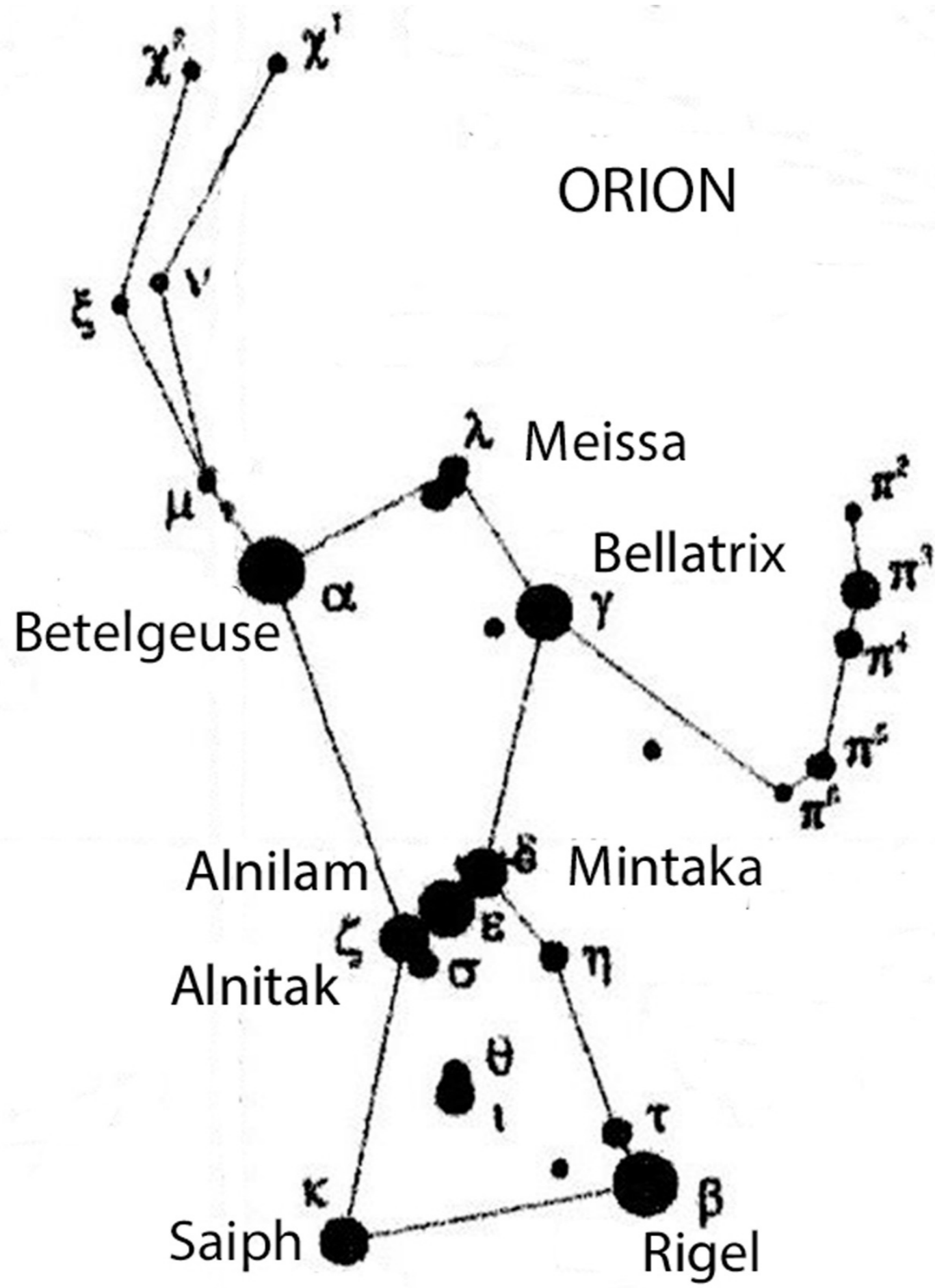




Winter Precession Into Spring



ORION





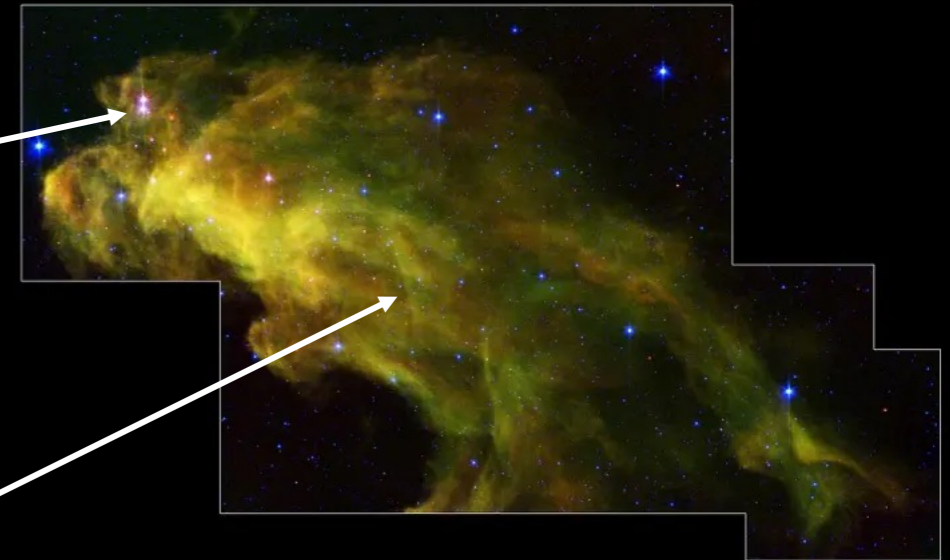
Rigel

IC 2118 Witch Head Reflection nebula



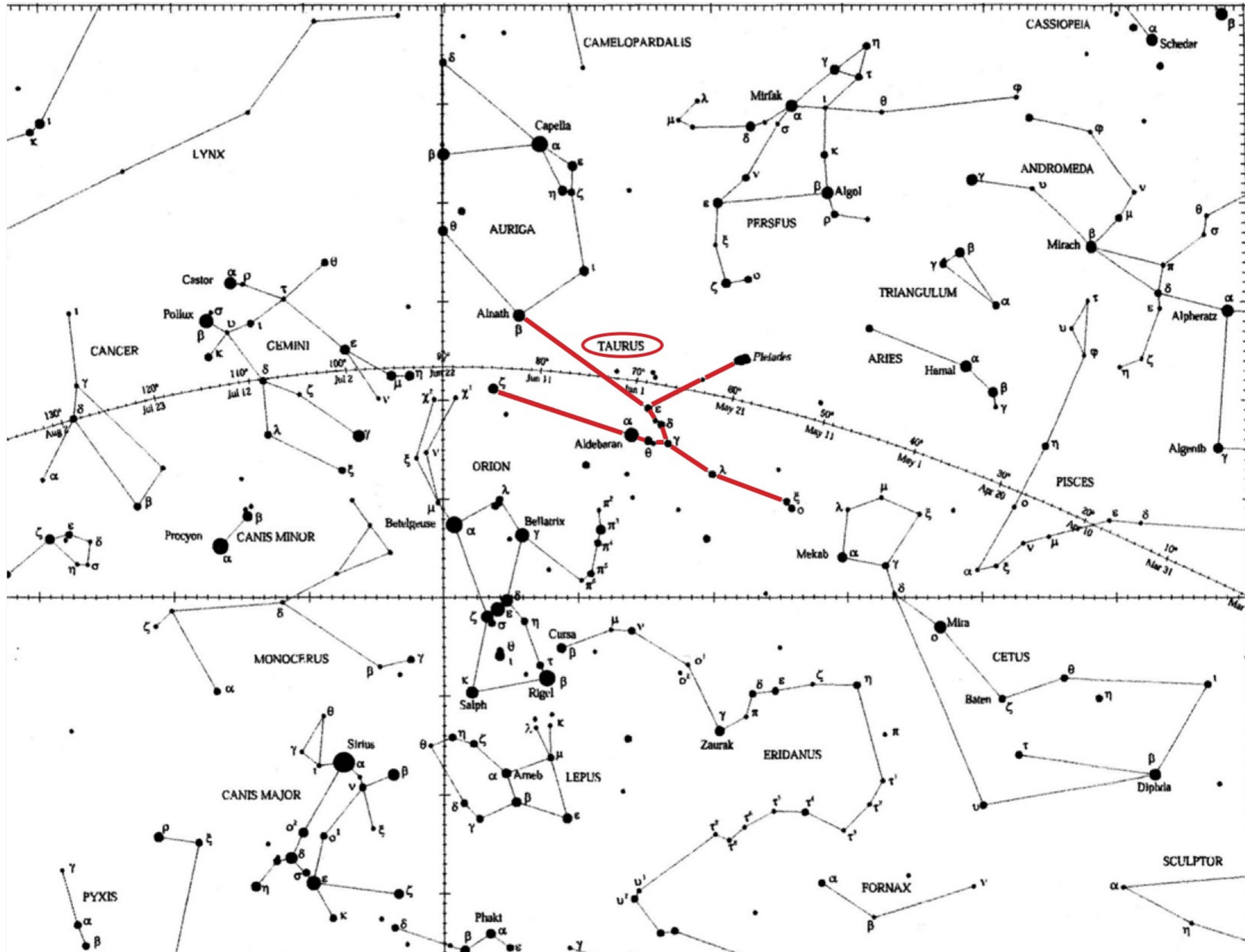
Block; Earth based telescope

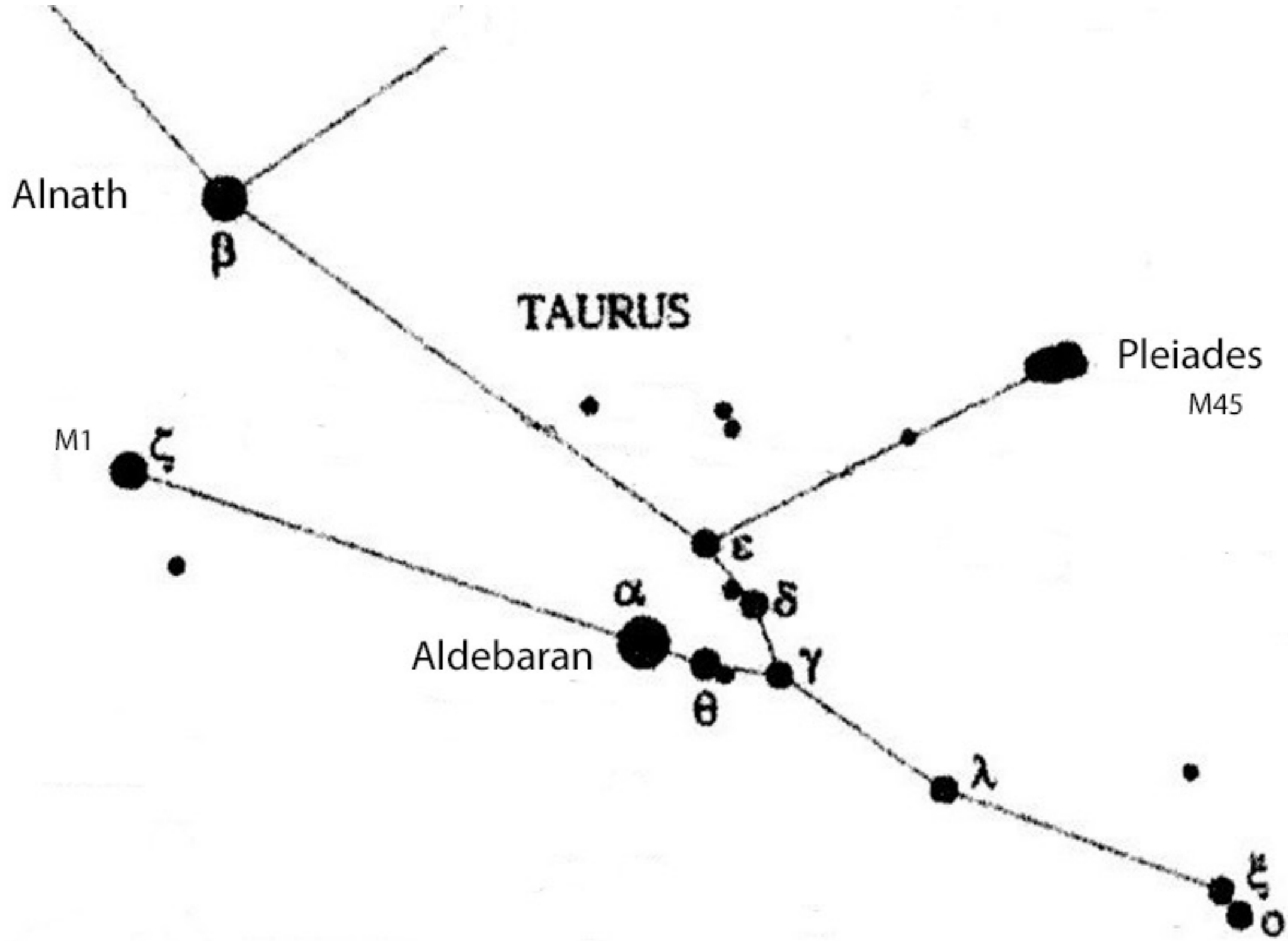
*Very young stars (pink)
*Polycyclic aromatic hydrocarbons (greenish)



Witch Head Nebula
NASA / JPL-Caltech / L. Rebull (SSC/Caltech)

Spitzer Space Telescope • IRAC • MIPS
sig06-020







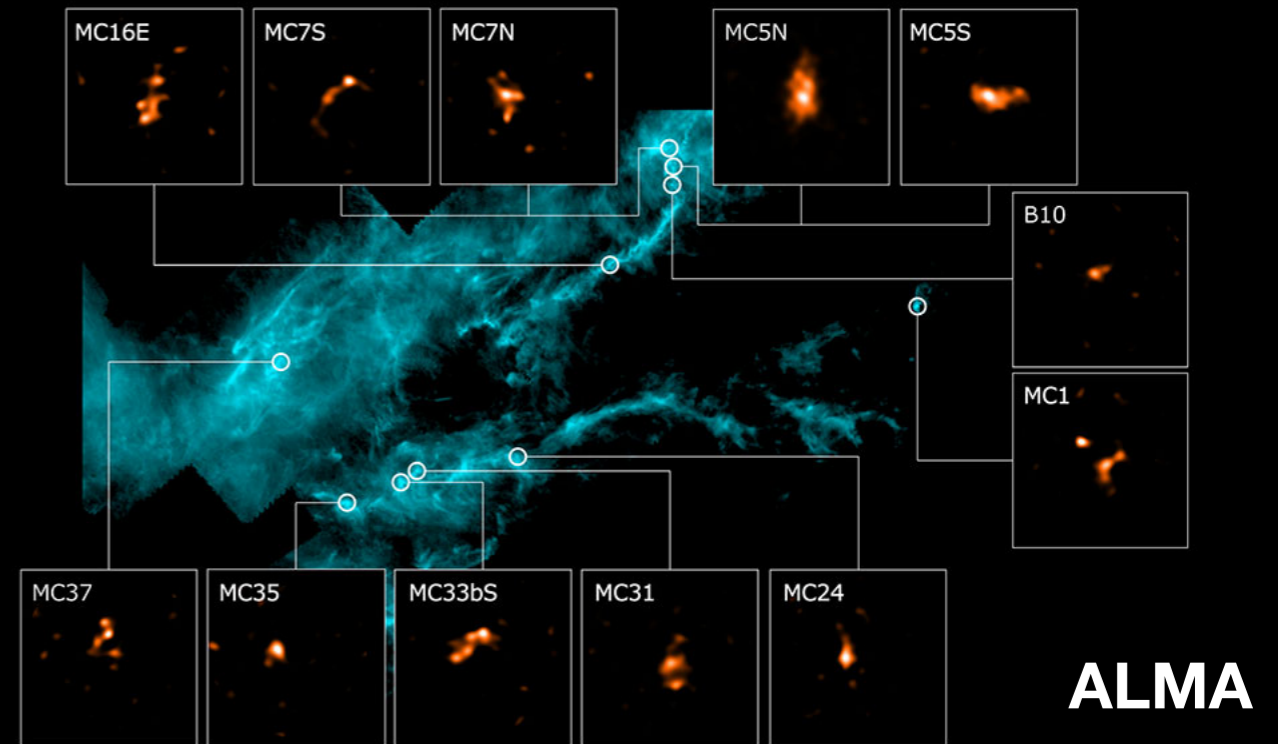
Pleiades
Open Star Cluster
The Seven Sisters



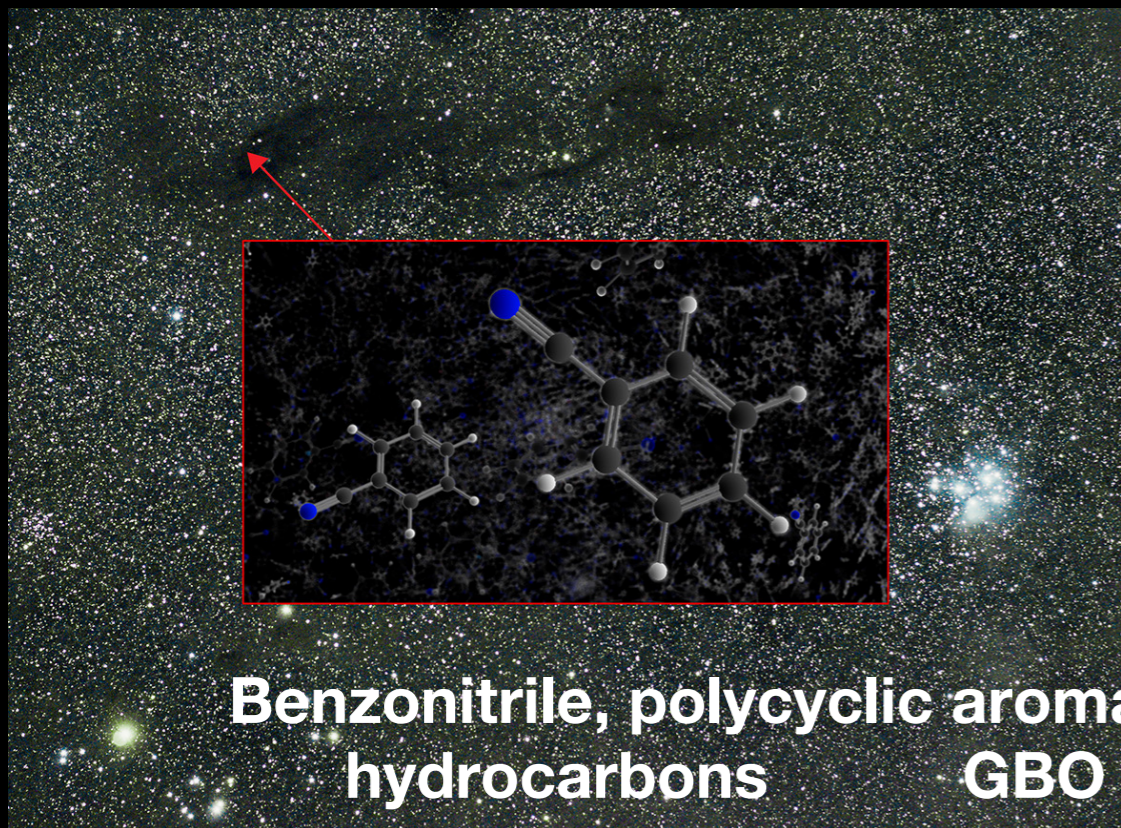
**The Hyades
Open
Star Cluster
With
Aldebaran
(The follower)**



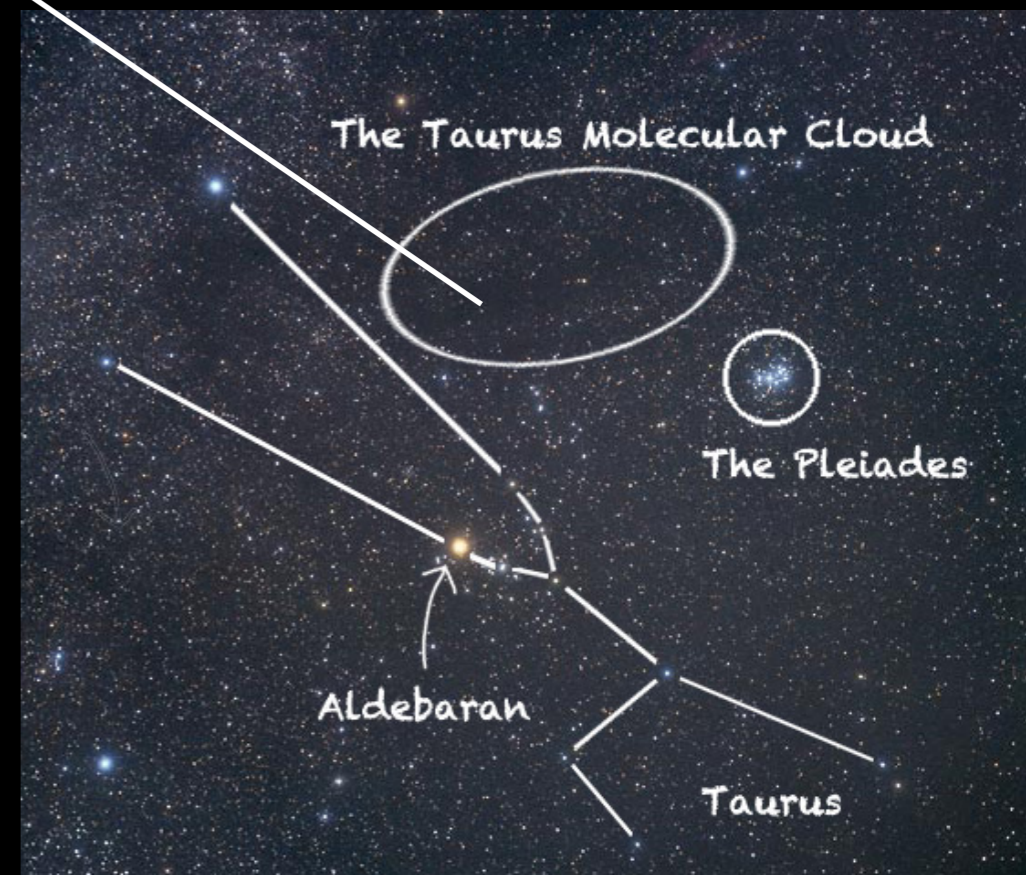
**The other
daughters of
Atlas**

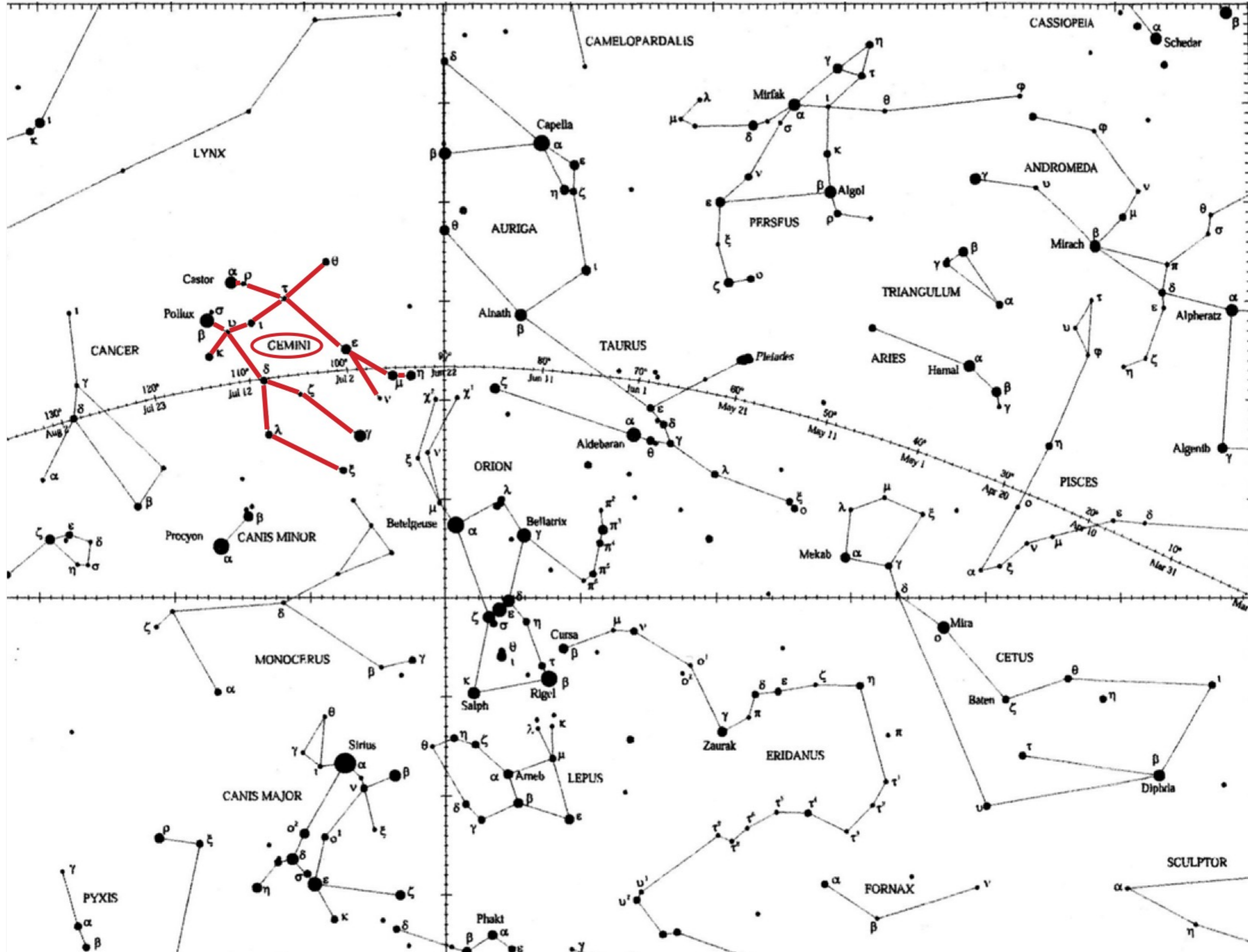


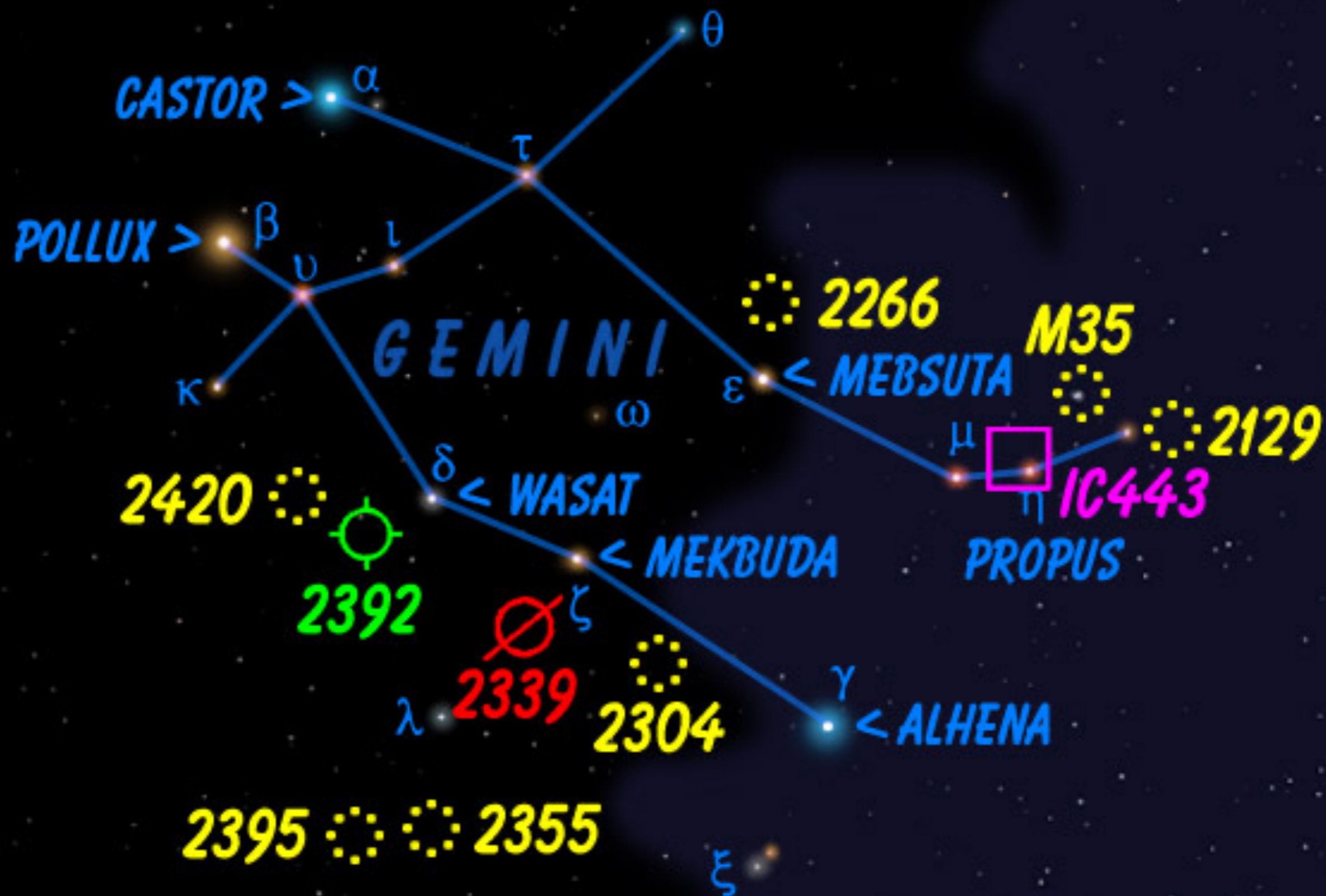
Taurus Molecular Cloud Nearest Star forming region to Earth



Benzonitrile, polycyclic aromatic hydrocarbons GBO



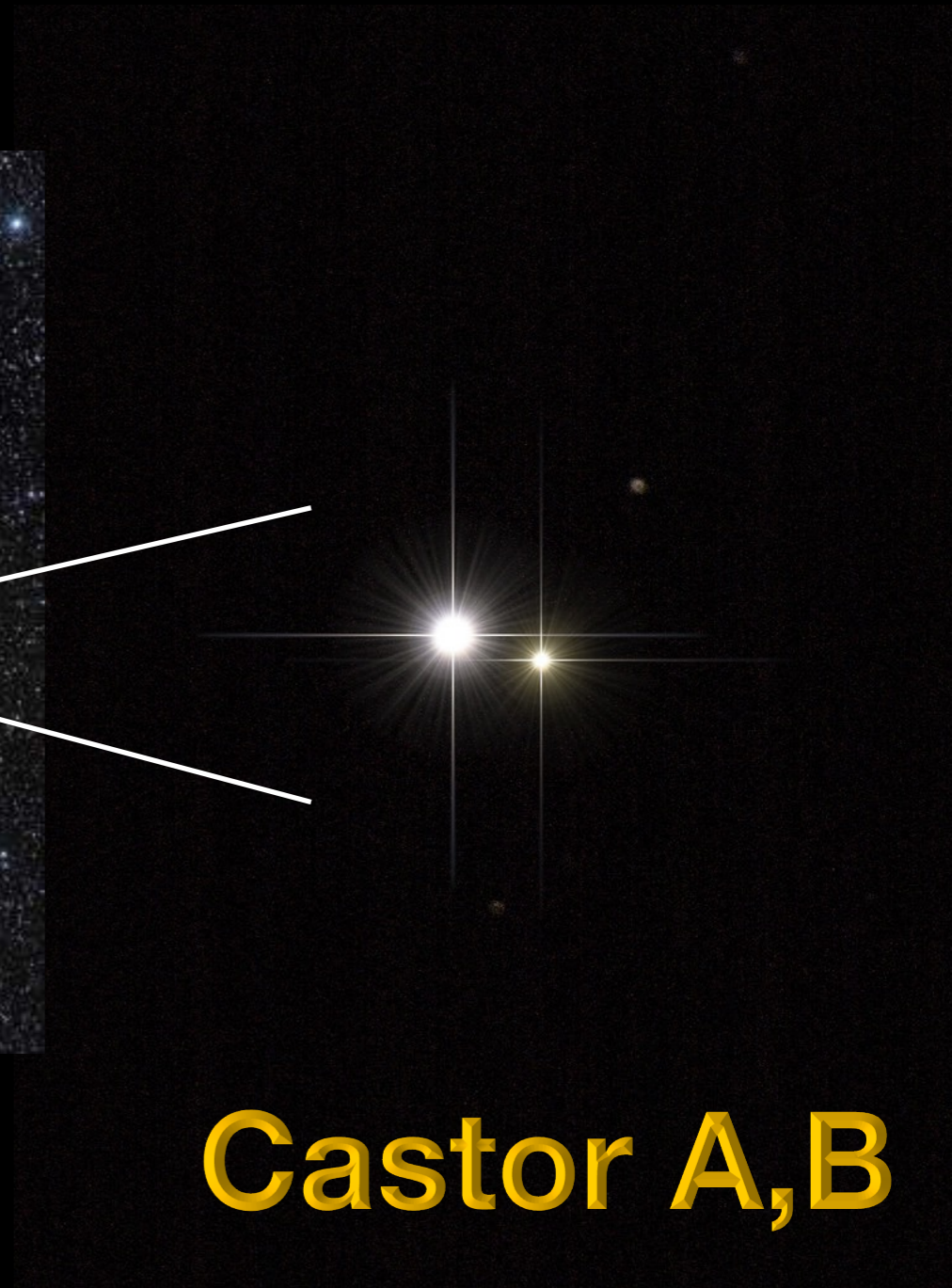






Pollux
 β Gem

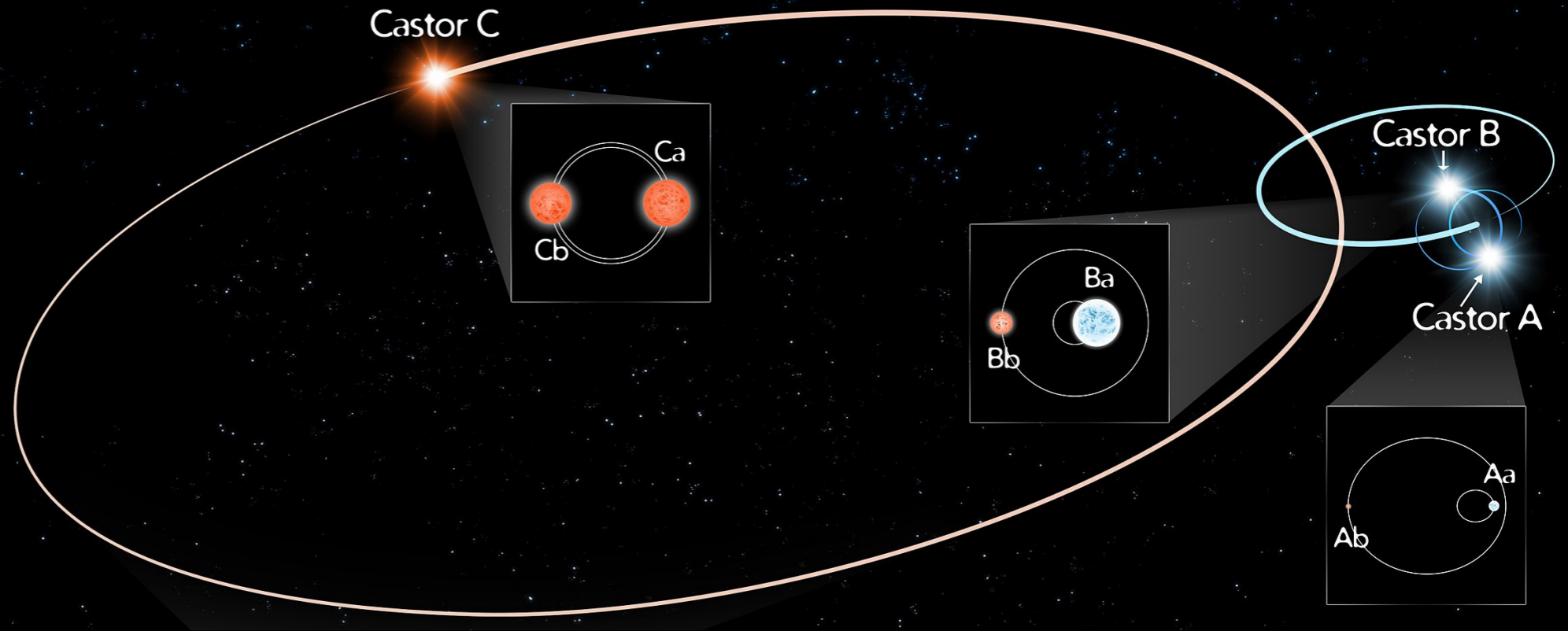
Castor
 α Gem



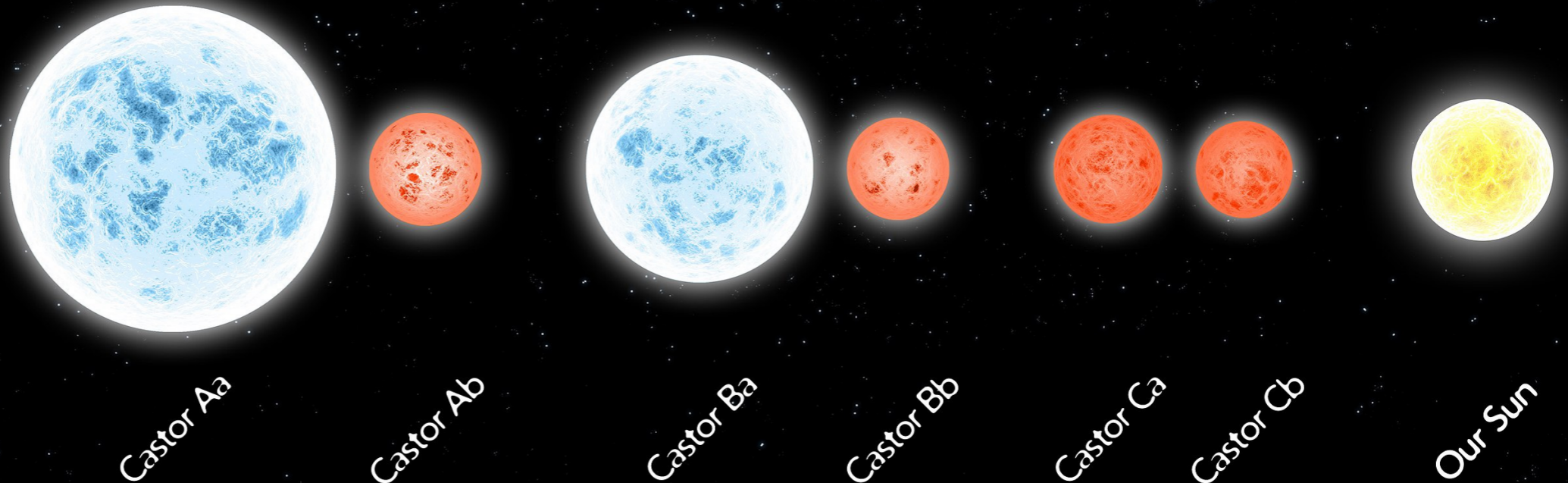
Castor A,B

α Gem

CASTOR – THE 6-STAR SYSTEM



SIZE COMPARISON



Courtesy NASA/JPL-Caltech.



Diana
H-a

SNR IC 443
Type II SN

Jellyfish
emission Nebula



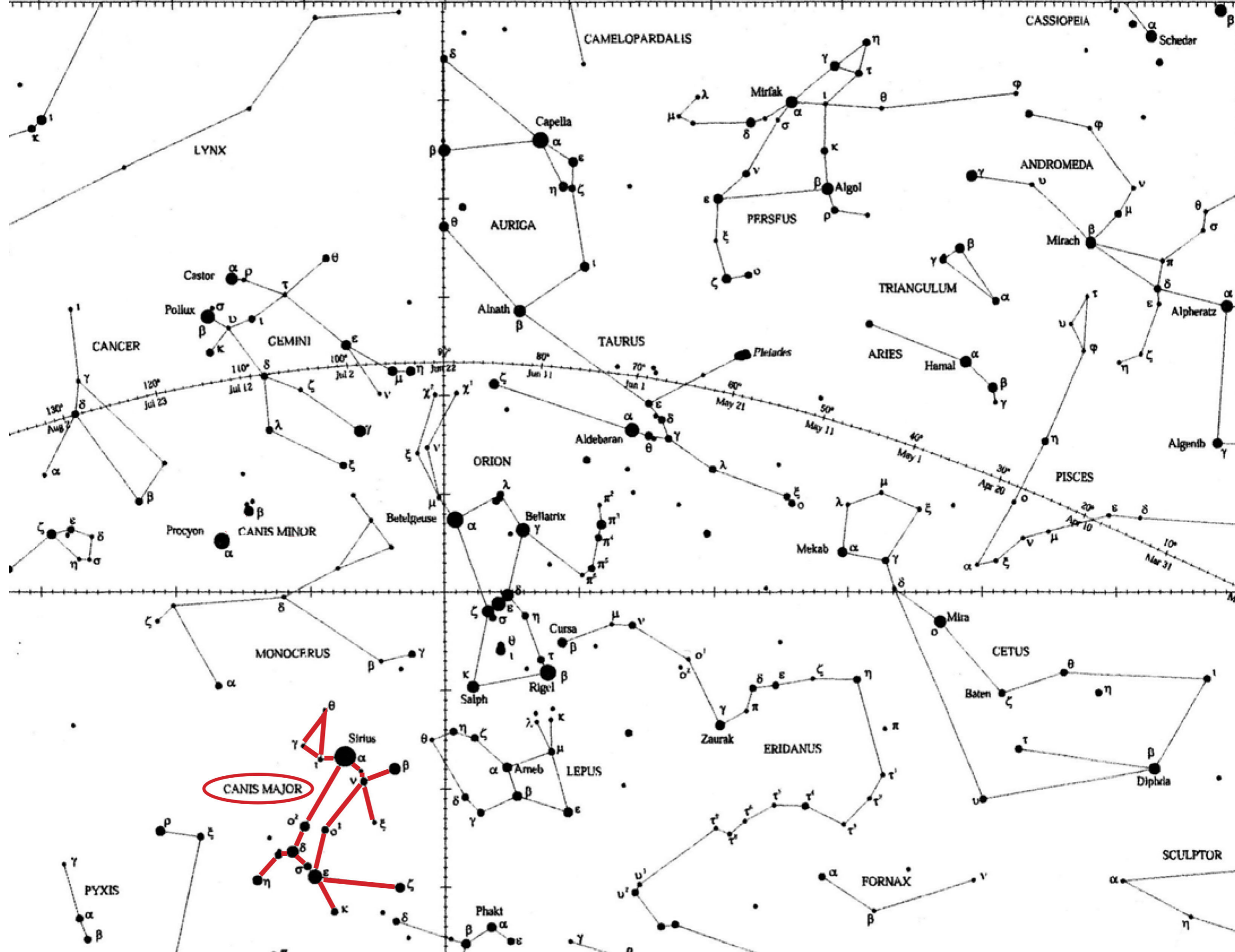
WISE
Xray

NGC 2392

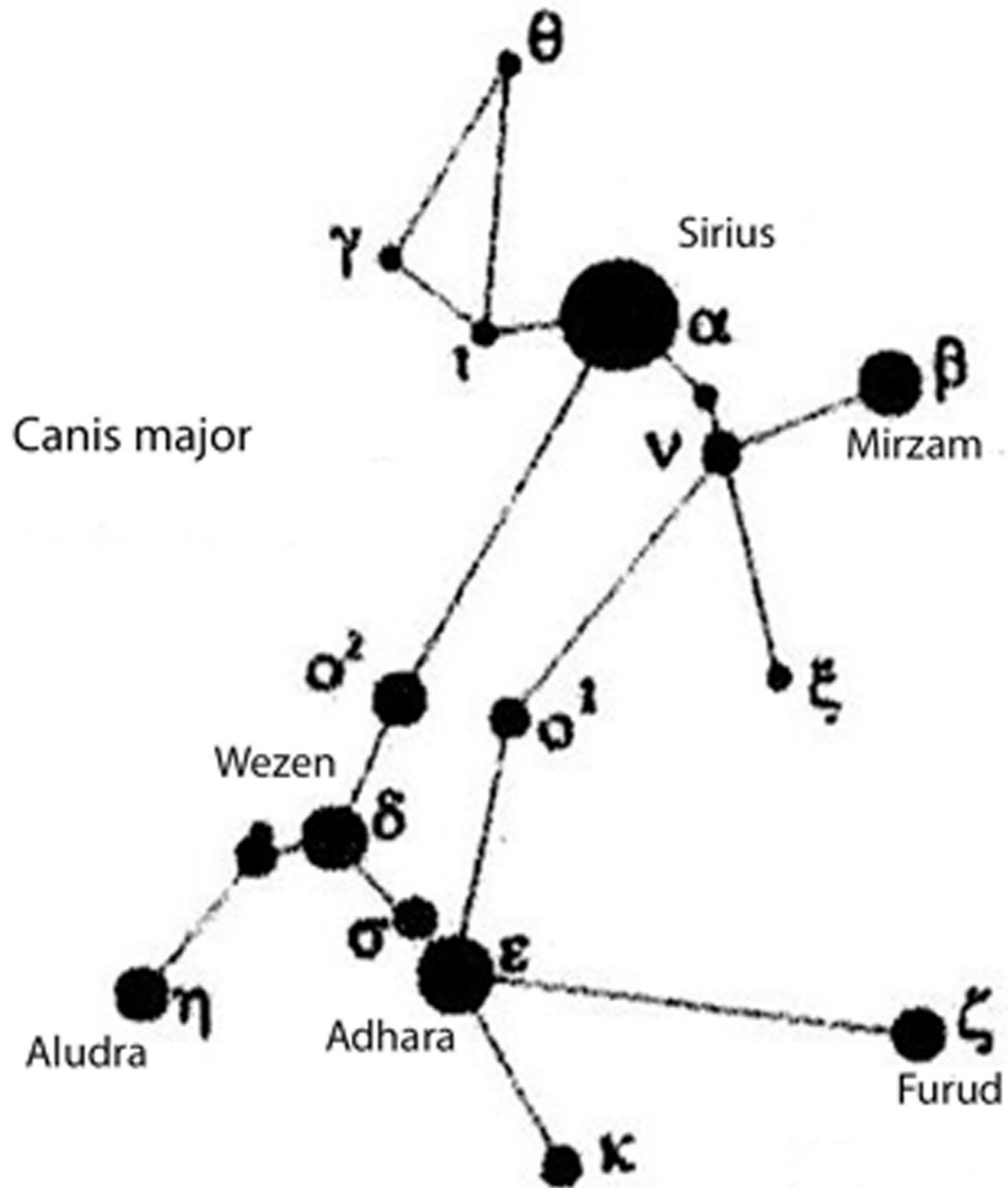
Eskimo Planetary Nebula



Hubble 3D view



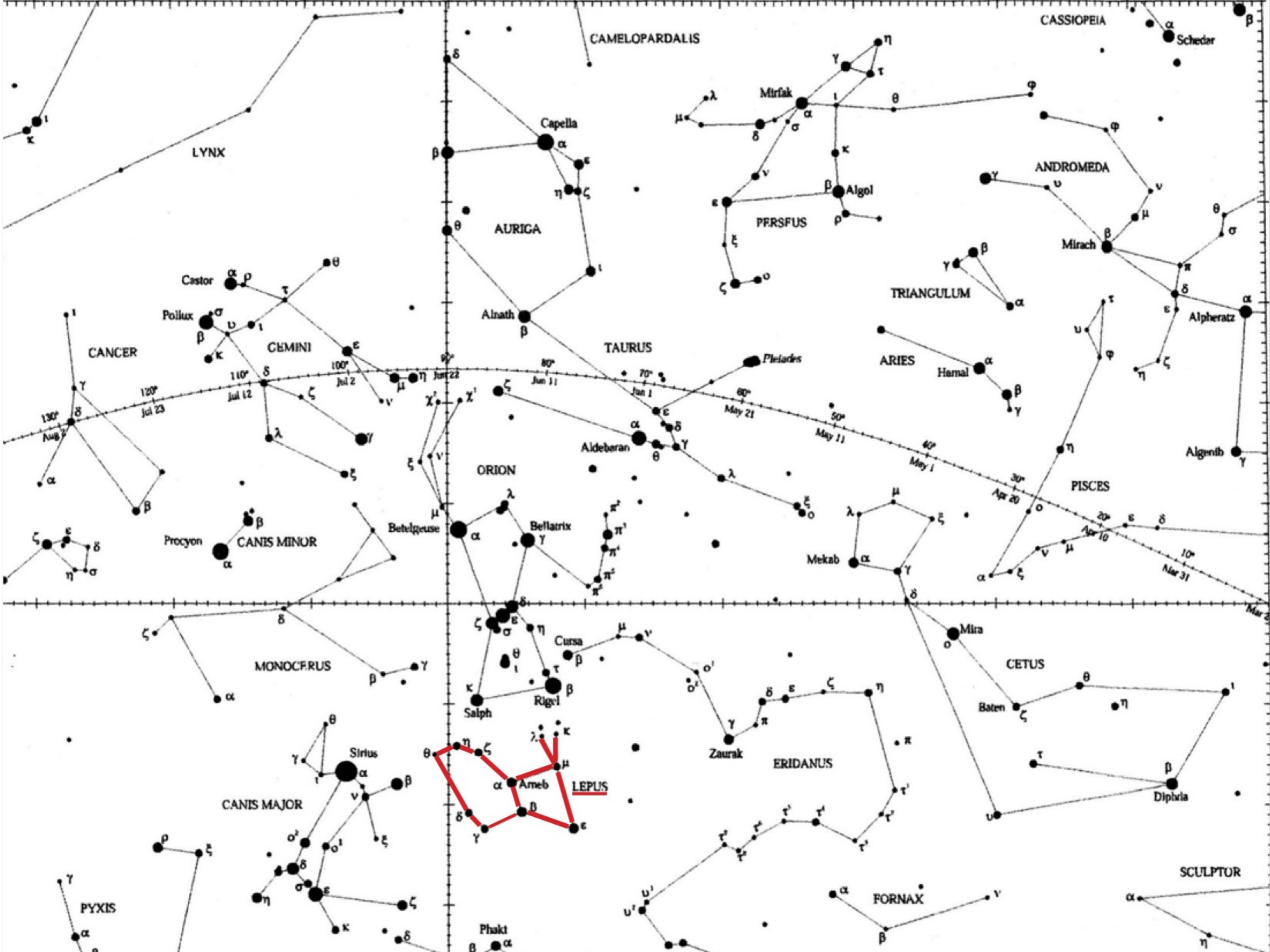
CANIS MAJOR

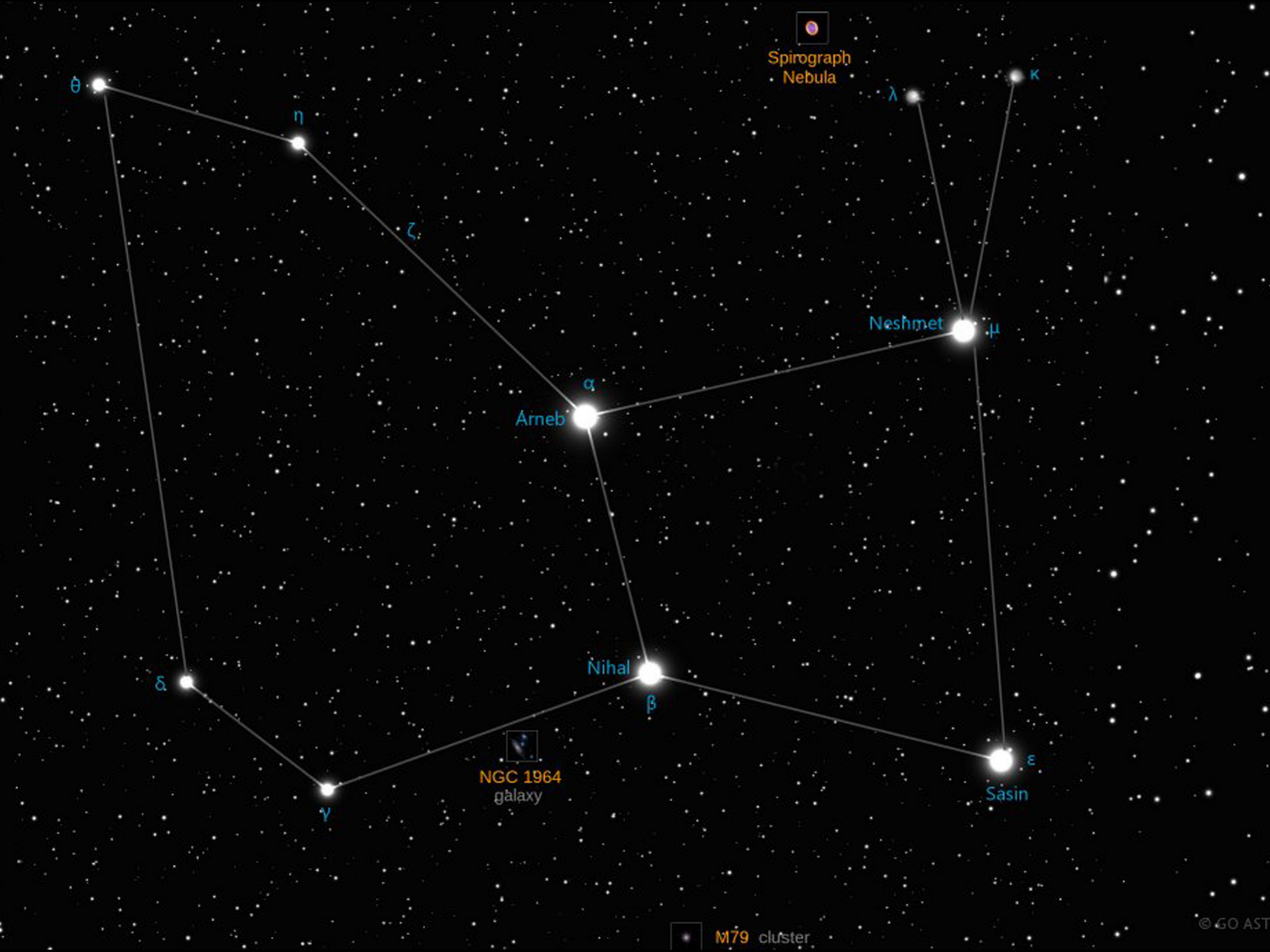




Colliding Galaxies

NGC2207
IC2163

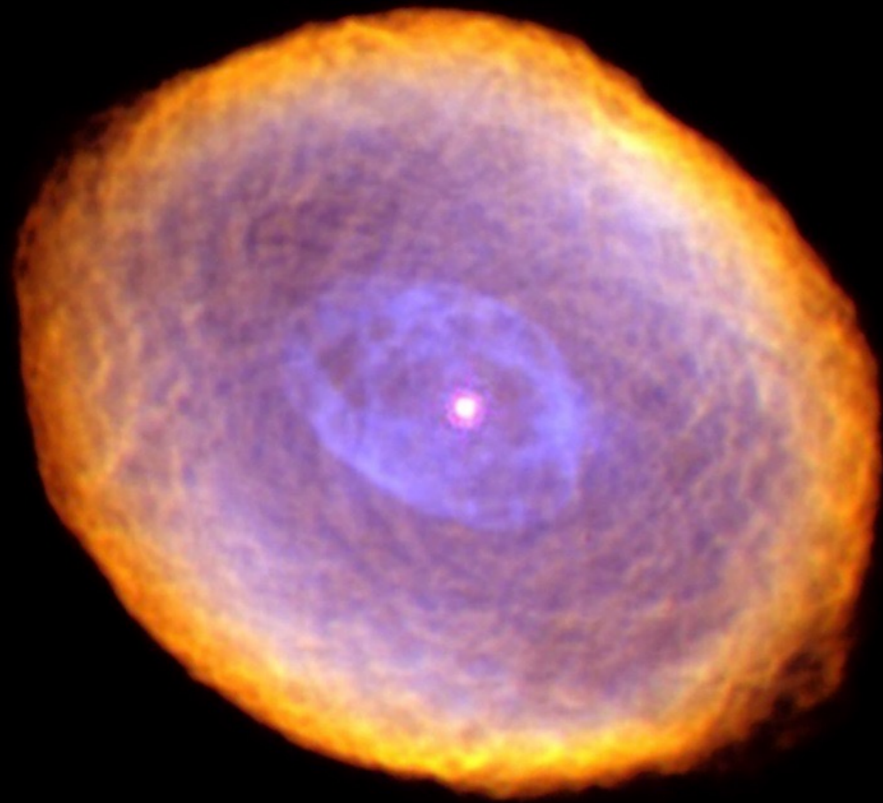




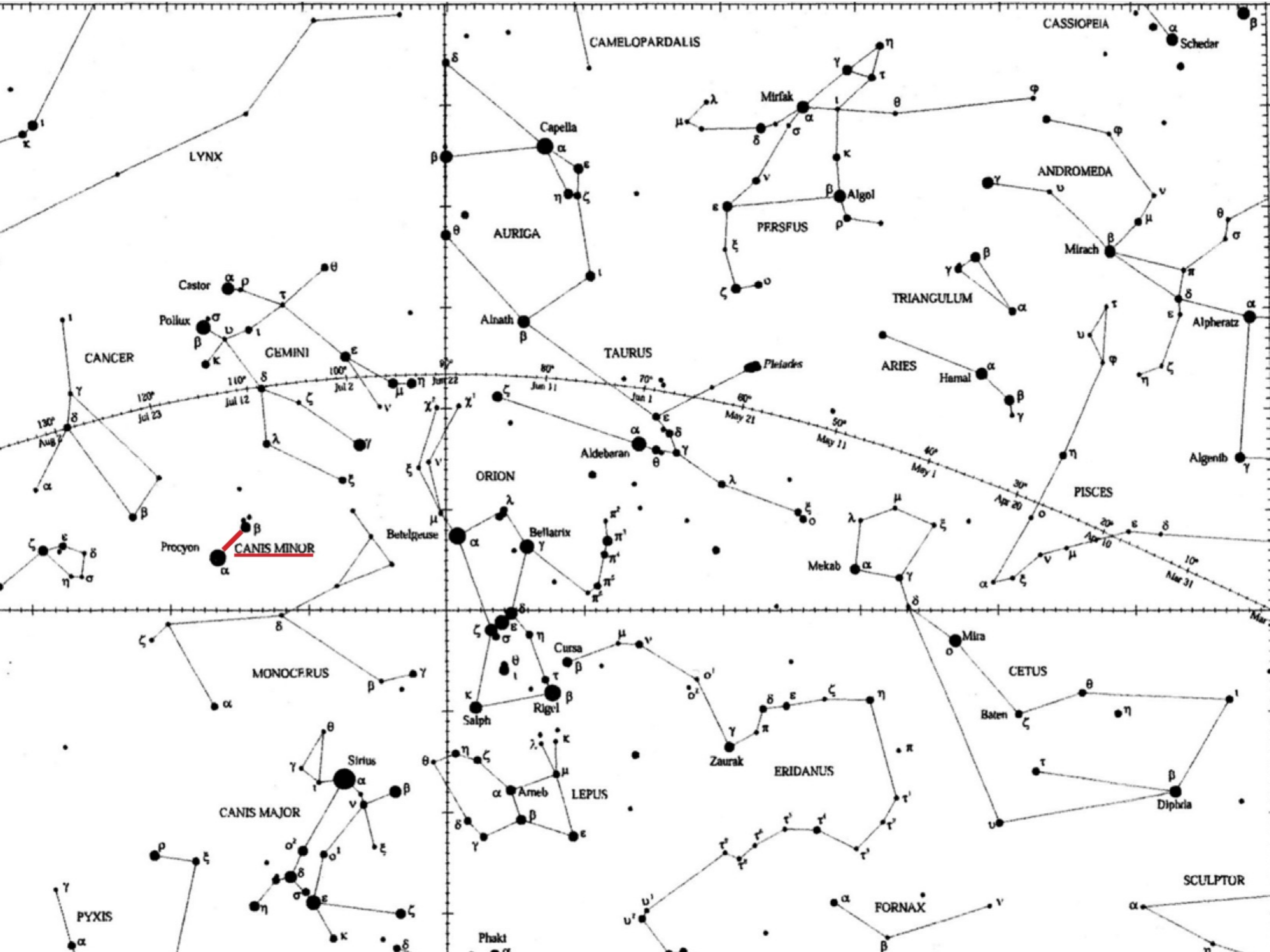

Spirograph
Nebula

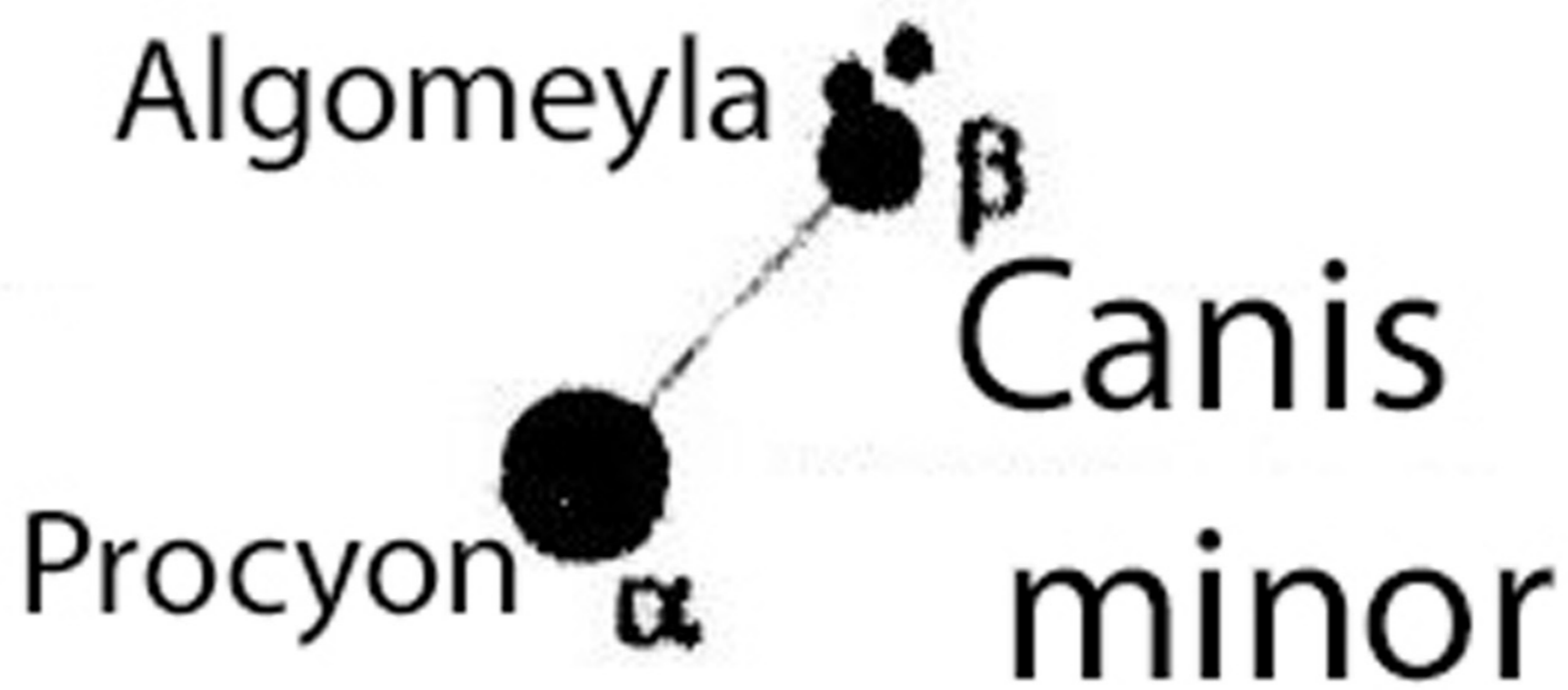

NGC 1964
galaxy


M79 cluster



IC 418
Spirograph
(Hourglass)
Planetary Nebula
Tellurium Detected





Abell 24

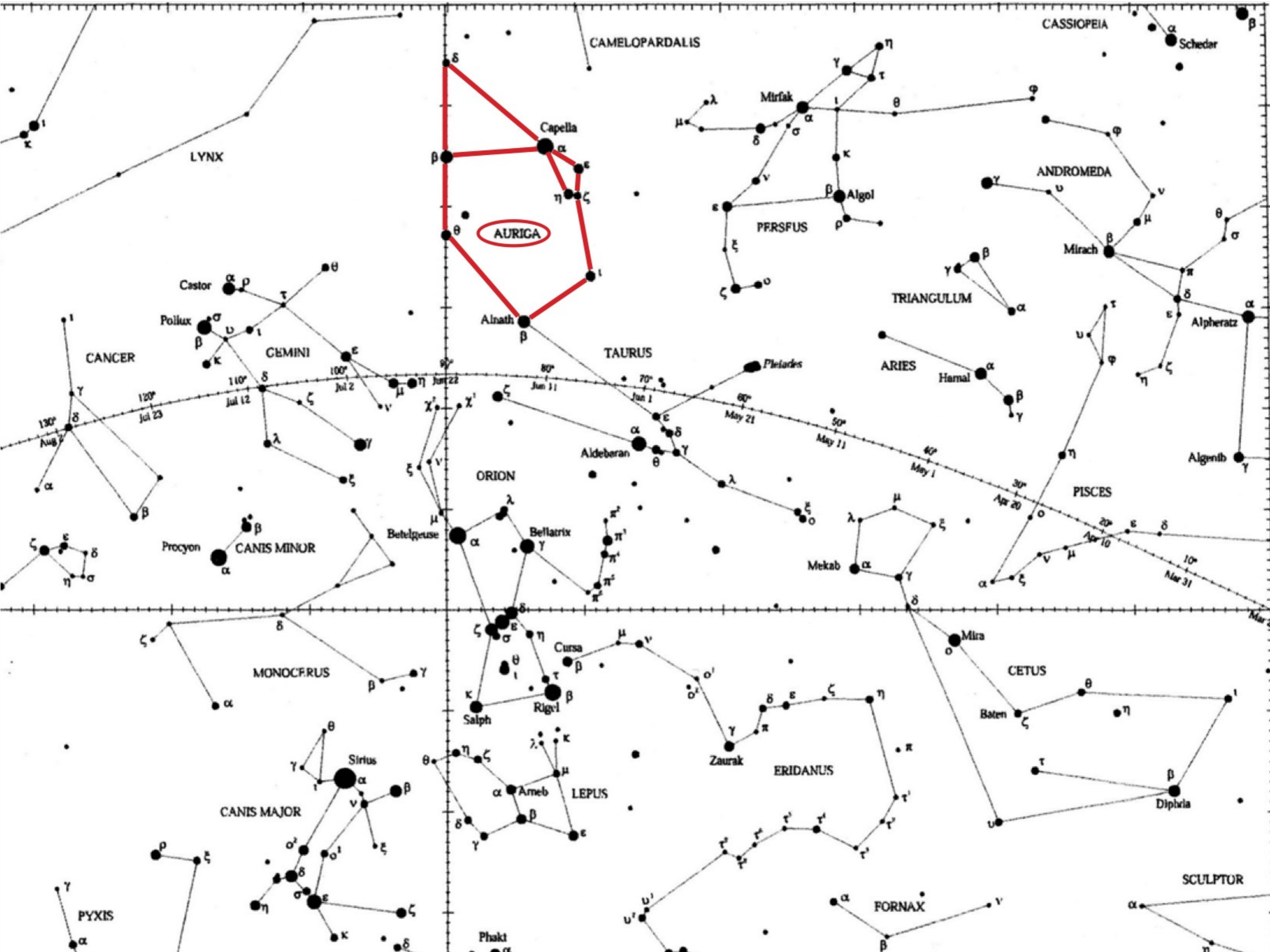
Planetary Nebula



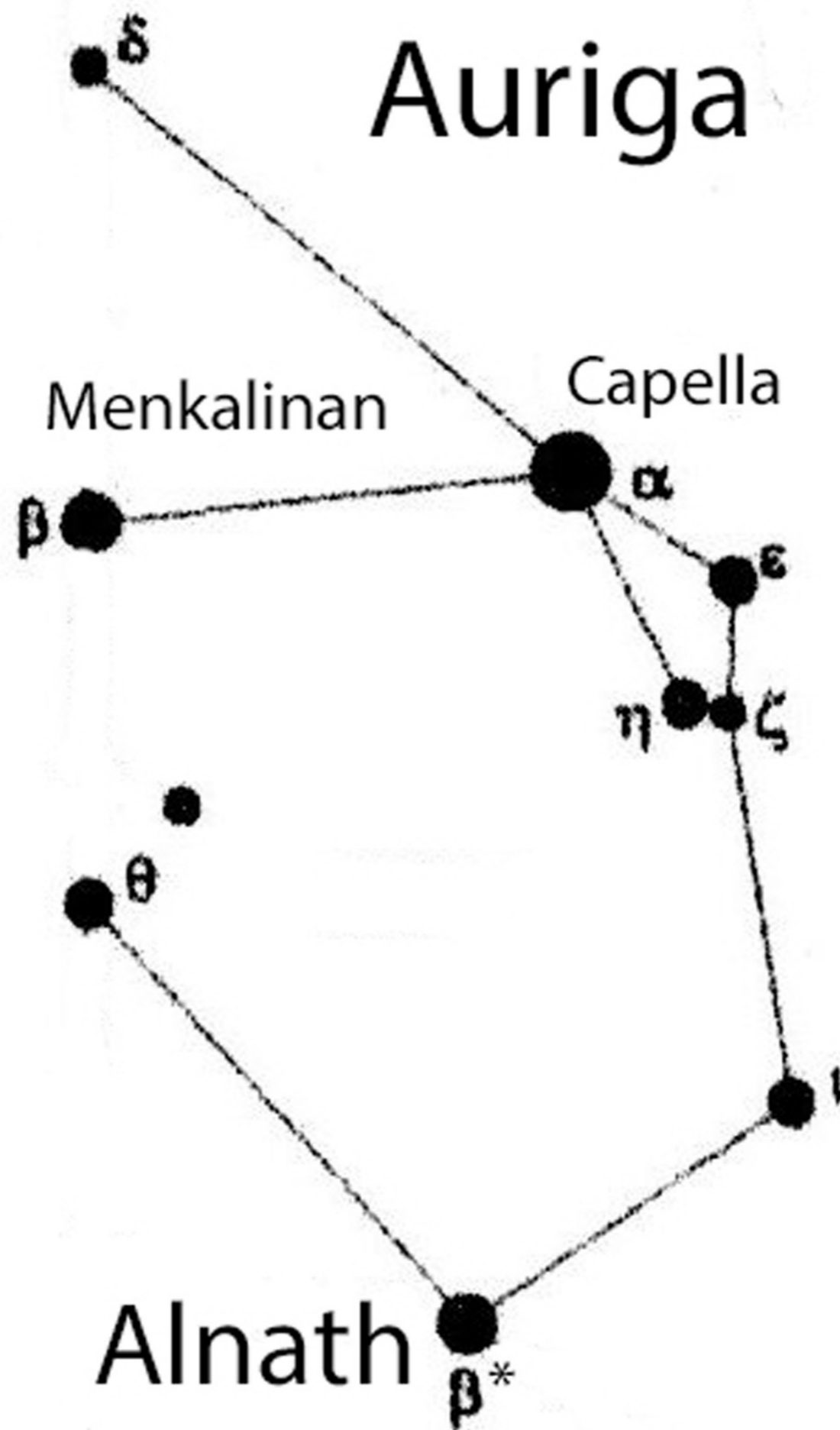
VLT



Texas Tech Univ:
Earth based
telescope



Auriga



Emission Nebulae
Sh2-232, 231, 235

IC 405
Flaming Star Nebula



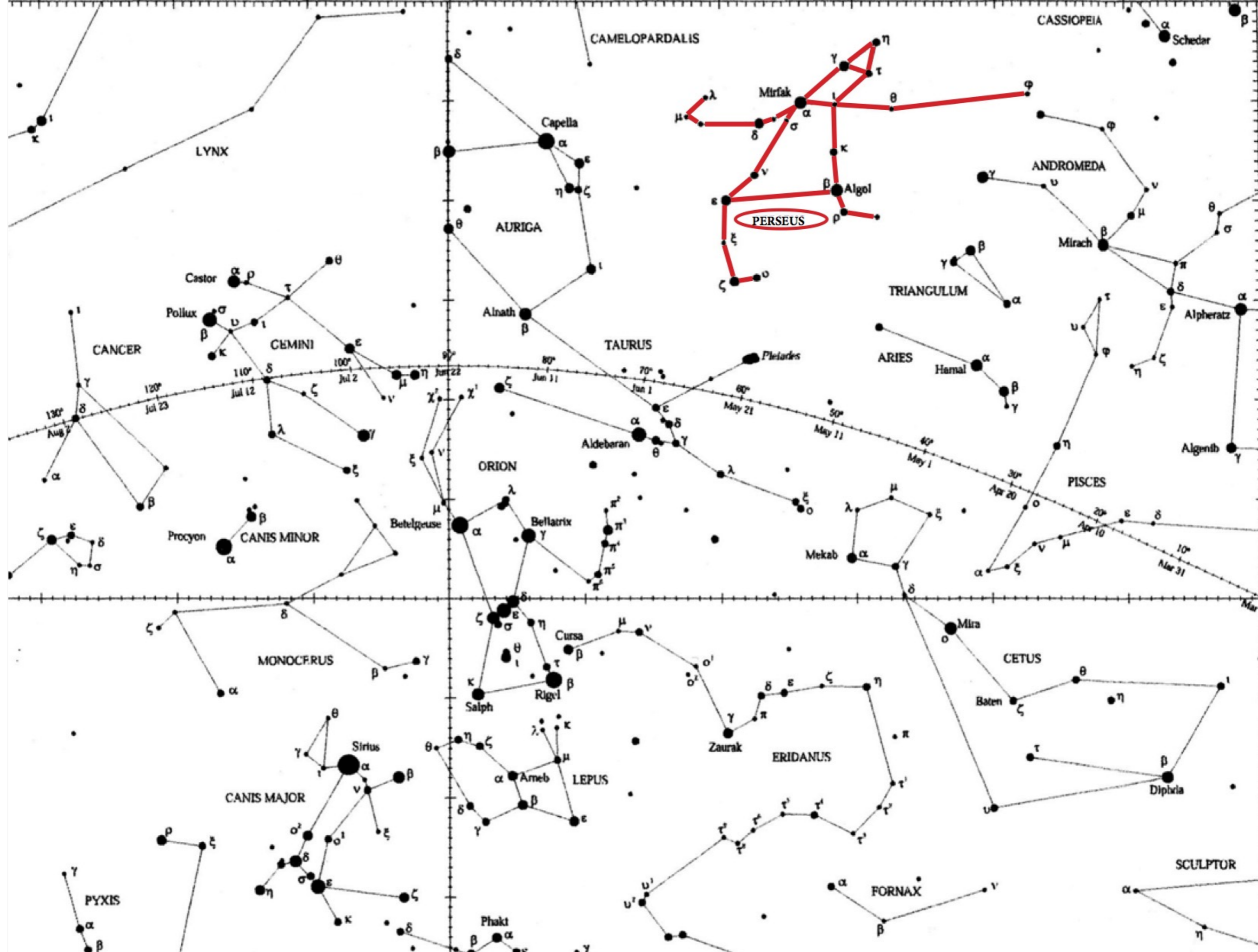
Aurora Panorama © 2013 Terry Hancock www.astronomy.com

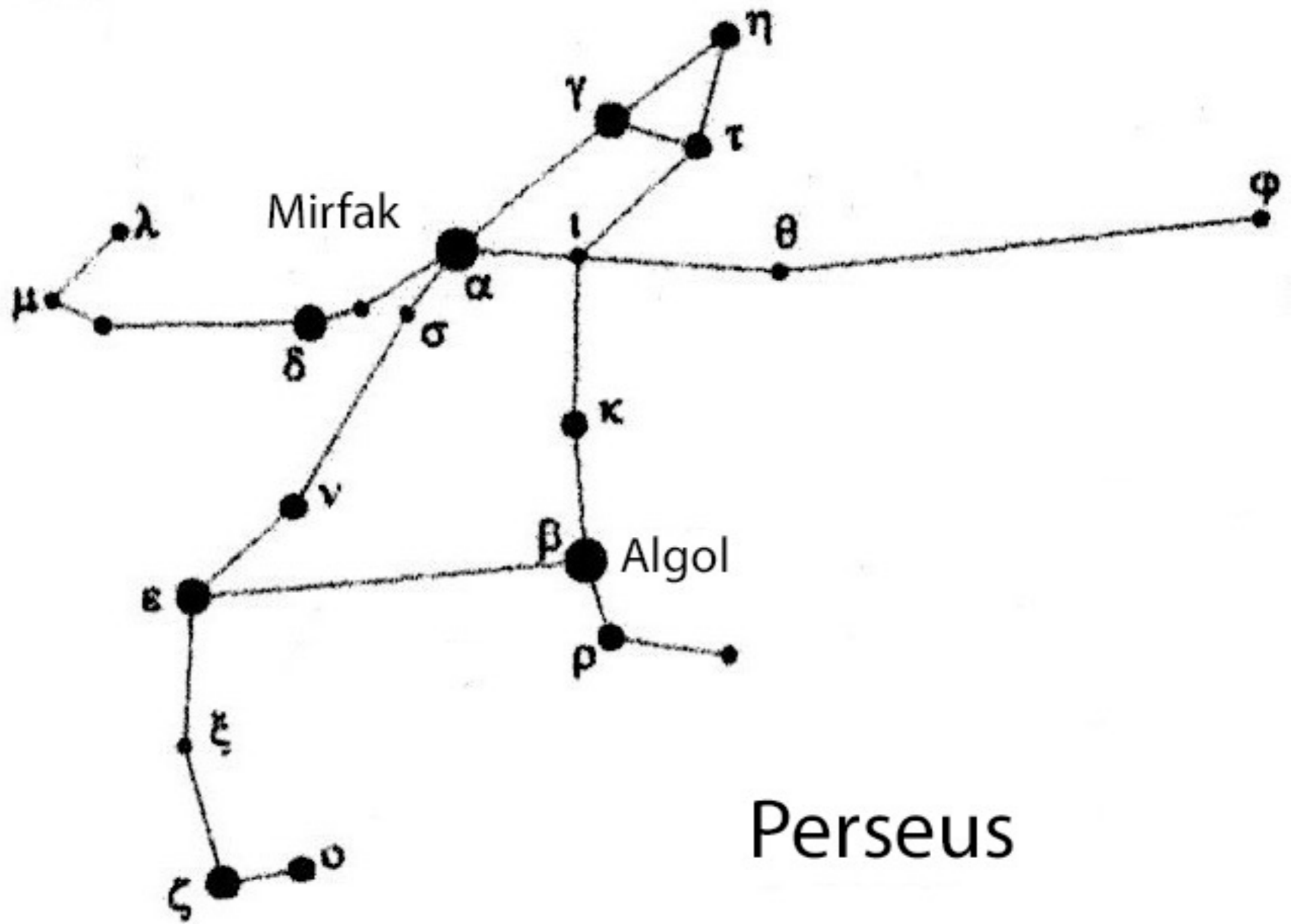
IC 410
The Spider
Nebula

IC 410
The
Tadpoles
Nebula

NGC 1931
The Fly Nebula

Terry Hancock





Perseus



Cluster IC348



NGC 1333

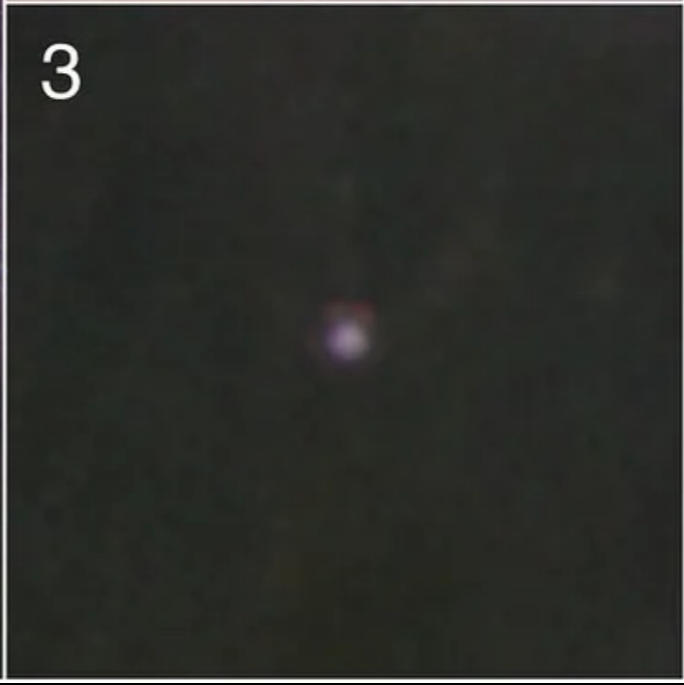


Clusters with a range of stellar ages



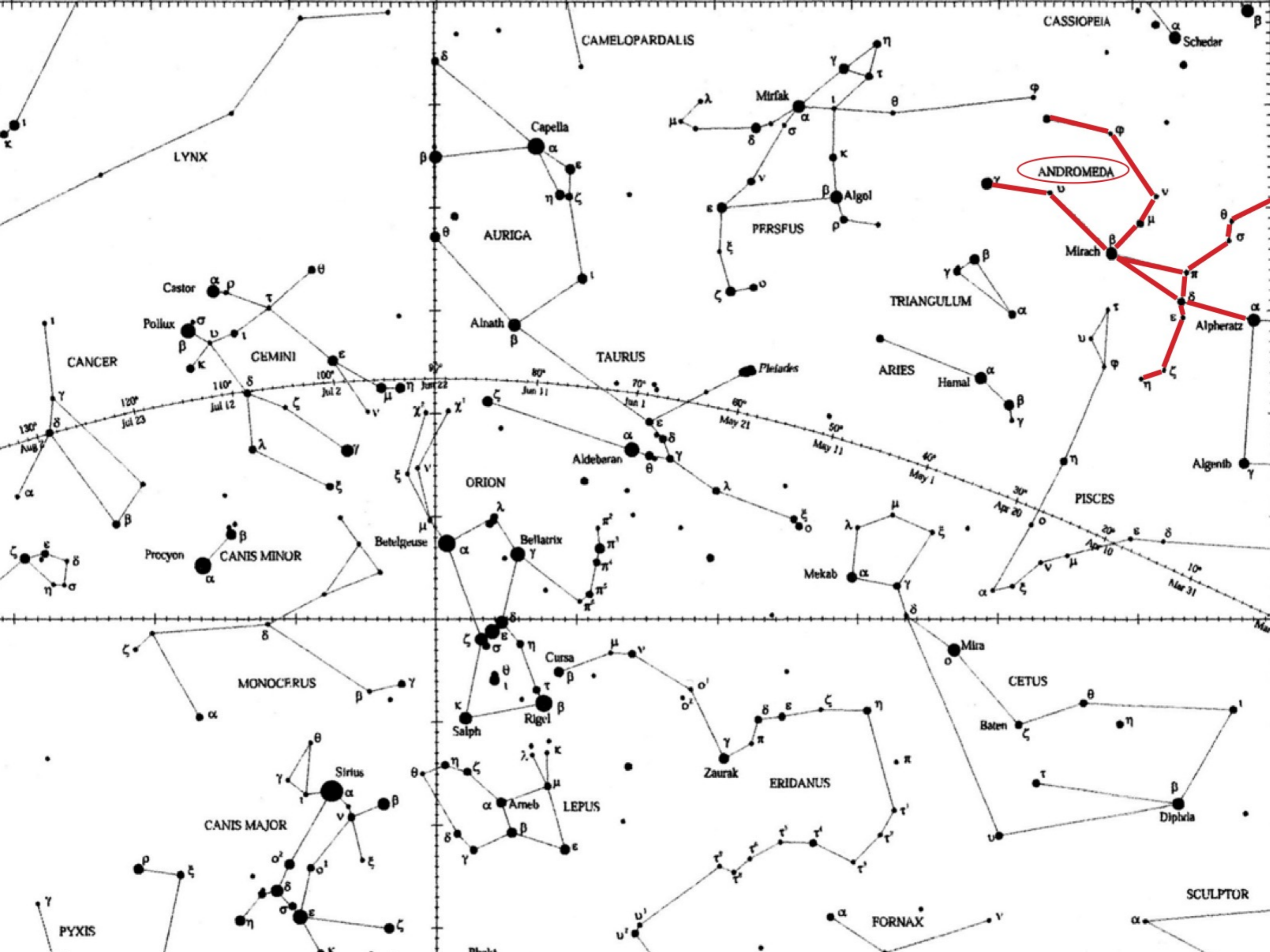
Perseus Molecular Cloud

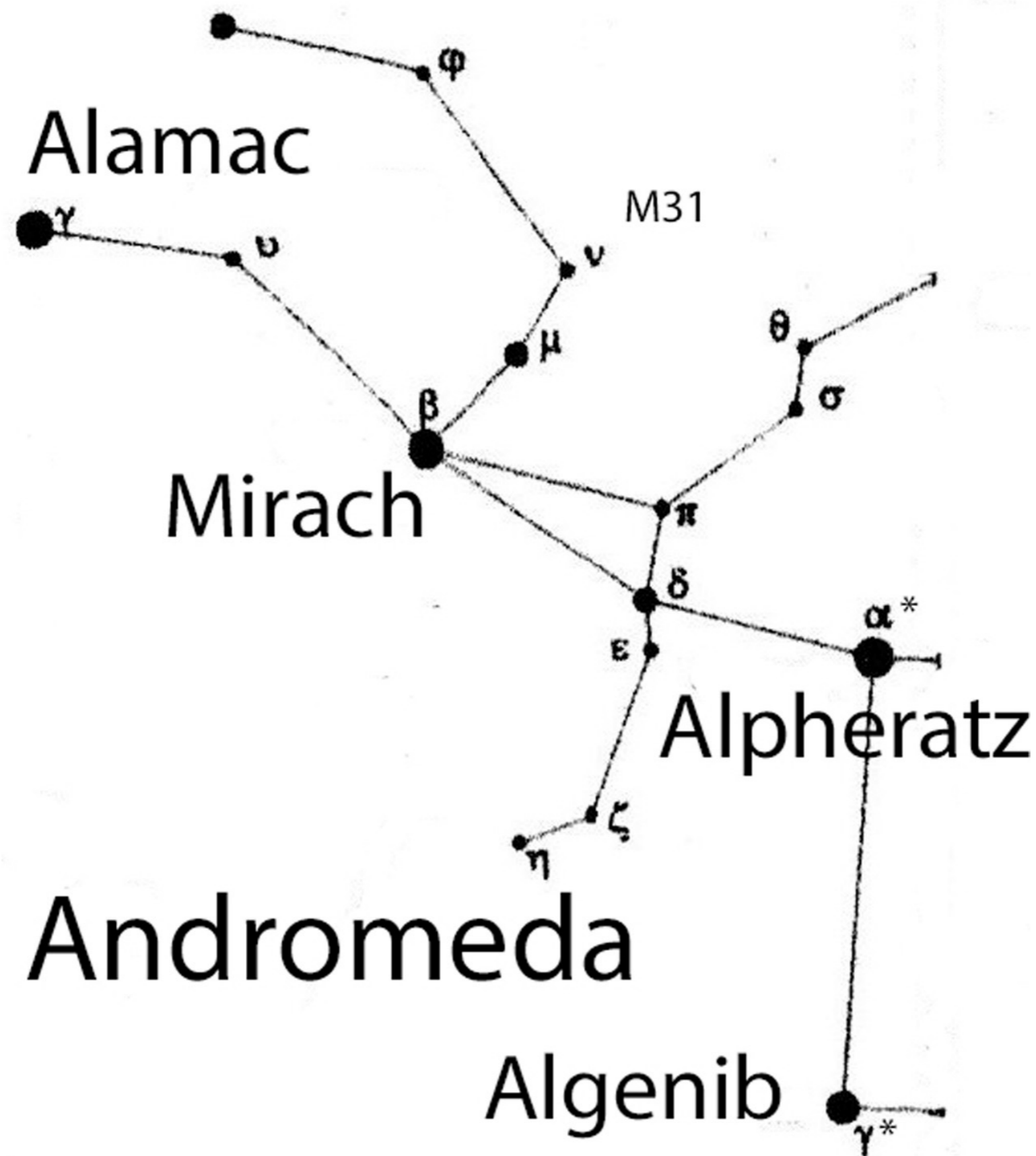
Spitzer IR

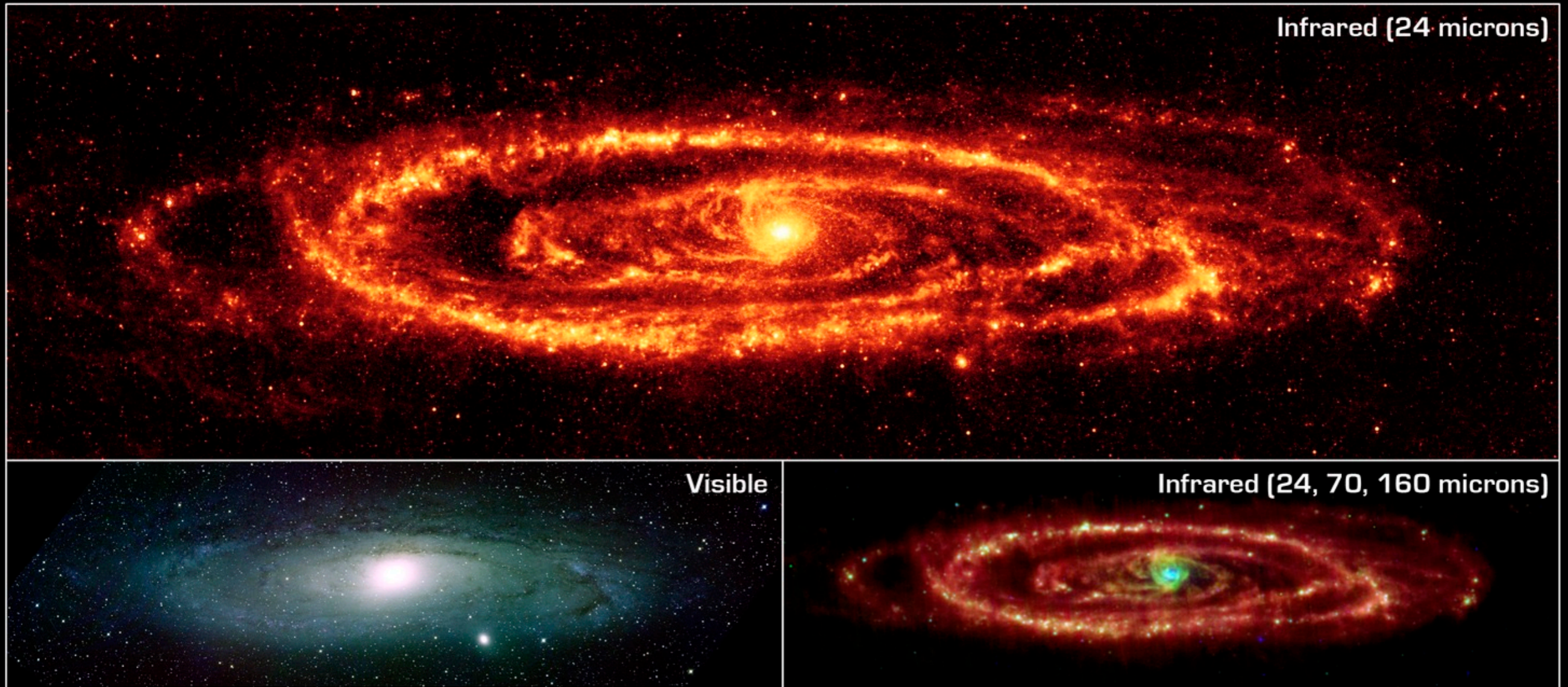


**IC 348
Star
Cluster
Smallest
Brown
Dwarfs
3-4 Mj**

JWST







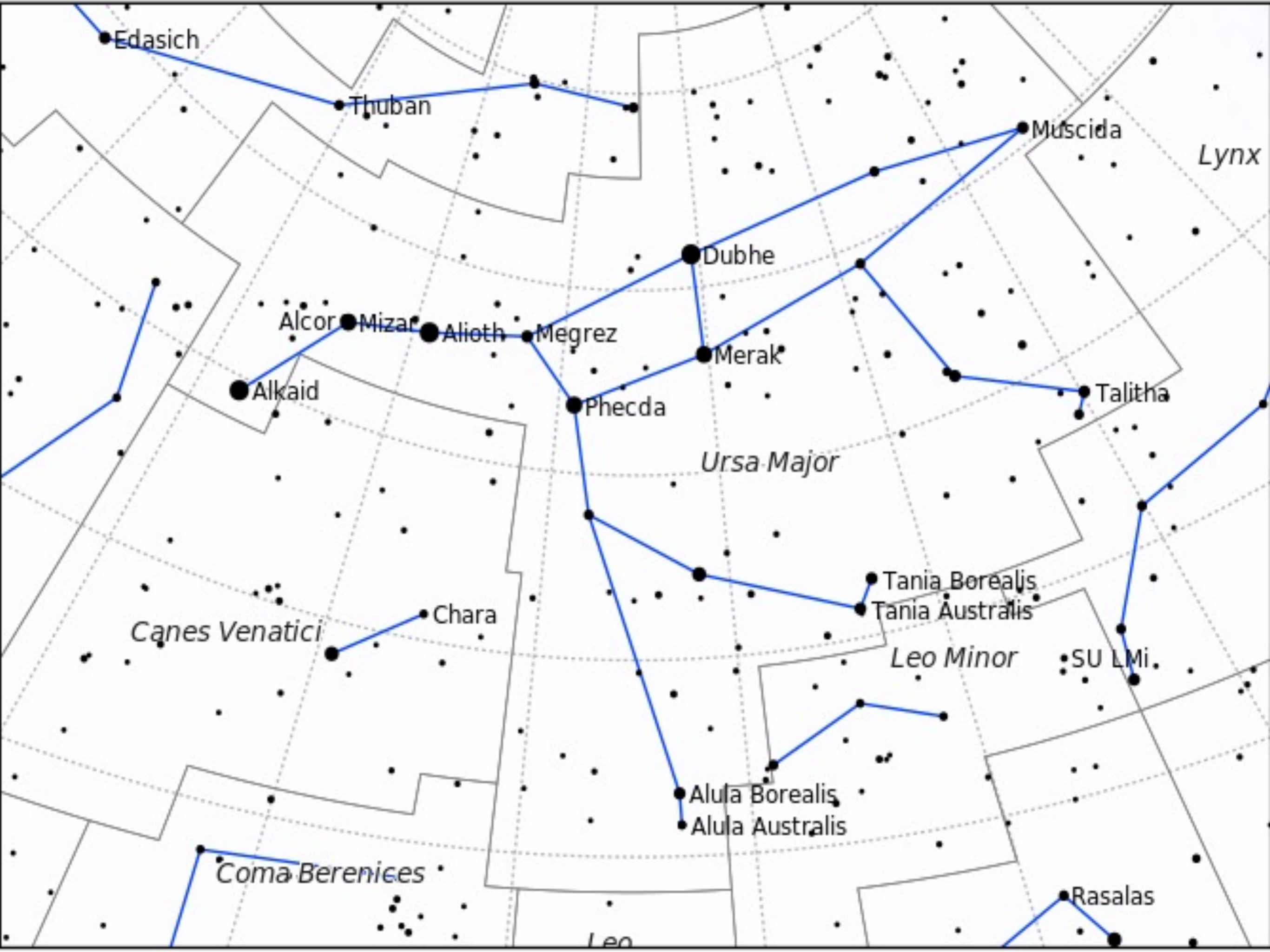
Dust in Andromeda Galaxy (M31)

NASA / JPL-Caltech / K. Gordon (University of Arizona)

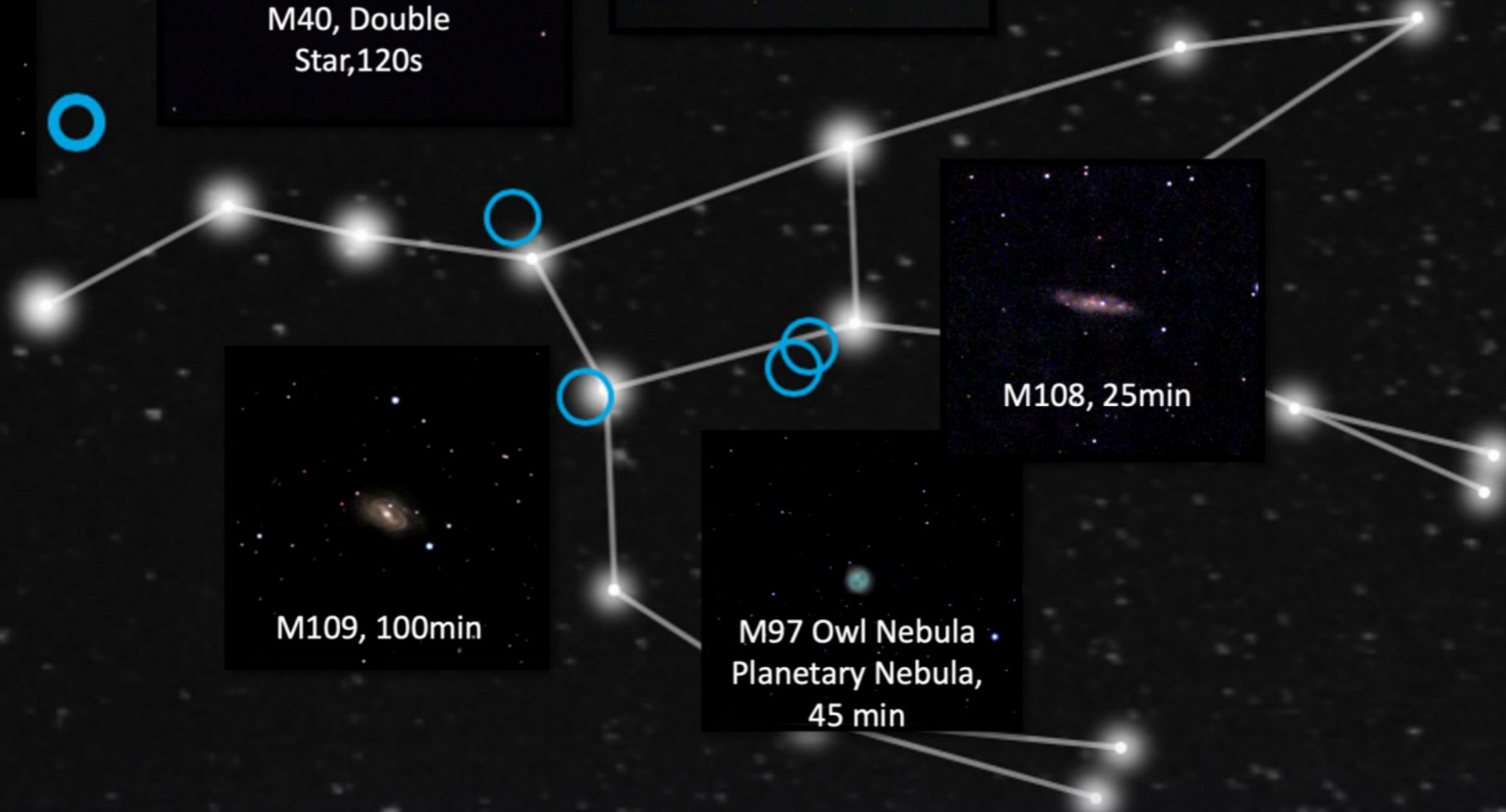
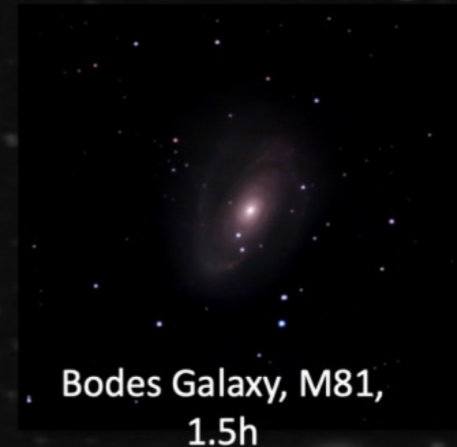
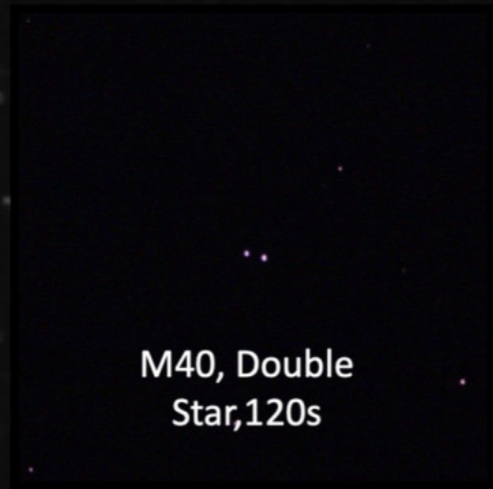
Spitzer Space Telescope • MIPS

Visible: NOAO/AURA/NSF

ssc2005-20a



Ursa Major



Stellina

OWL Nebula

